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A MANUAL

OF

HOMŒOPATHIC

VETERINARY PRACTICE:

DESIGNED FOR

HORSES,

ALL KINDS OF DOMESTIC ANIMALS

AND FOWLS;

PRESCRIBING THEIR PROPER TREATMENT WHEN INJURED OR DISEASED, AND THEIR PARTICULAR CARE AND GENERAL MANAGEMENT IN HEALTH.

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1874

PREFACE.

THE design of the present work is twofold,—including, as it does, the whole care of domestic animals in health and in sickness. The first part, therefore, relates to the choice, feeding, training, and breeding of the animals and fowls useful to man; while the second part describes the various forms of disease and different casualties to which these animals are liable, designates the principal remedies and their chief indications, and suggests the proper dietetic and accessory treatment. But to these two general divisions is added a third, the Materia Medica, apparently secondary to the latter, but in reality no less important.

The superior care bestowed in Great Britain upon each class of domestic animals, the remarkable perfection attained in the culture of horses, and more especially of sheep and horned cattle, and the consequent high value set upon them when imported into this country, have induced us to embody in the first part of this work the substance of a recent publication—"Veterinary Homœopathy"—by Messrs. Leath and Ross, of London. Much that is contained in this section is indeed more applicable to England than to America; but we have preferred to present it as a whole, in order that our readers may be enabled, as far as possible, to profit by the longer continued studies, more particular attention and greater experience of our transatlantic cousins.

For the same reasons we have freely availed ourselves of the descriptions of disease furnished by the above-mentioned work. To these have been added much valuable matter from the writings of Messrs. Moore and Lord; much also that has been gleaned from homœopathic literature in general, and that has not heretofore been incorporated into any manual of veterinary practice. Indeed the entire range of homœopathic periodical literature, as well of this country as of Great Britain, has been explored in order to enrich this work with authentic accounts of the homœopathic treatment of veterinary disorders. But, for reasons already given, the English journals have proved more fruitful in such material than our own. In the same spirit, also, we have carefully scanned the principal works on veterinary homœopathic practice already published, both in the German and in the English language. From the writings of Gunther, Gooday, Träger, Bœhm, Jackner, and Schwabe, in addition to those already referred to, much valuable assistance has been derived. And in quoting, we have always preferred the exact language of the author, whether mentioned by name or not. In this division it has been a principal object to lay before our readers authoritative accounts of the different diseases, and for this purpose frequent use has been made of the works of allopathic veterinarians, to which reference has usually been made in the margin.

Much valuable matter, especially relative to the more recent forms of disease, obtained from independent and original sources, is now for the first time included in a Homœopathic Veterinary Practice. In this class may be reckoned the accounts of the European and American Rinderpests, and especially that of the Epidemic Catarrh, or Horse Distemper, of 1872. The account of this last, at once entirely new and perfectly reliable, and of its successful homœopathic treatment, as here related, is believed to be richly worth the whole cost of the work to every owner of horses.

Another important feature of this second portion of the work deserving to be instanced here, consists in the very full details of what may be termed surgical diseases and casualties, such as sprains, splints, spavin, lameness, &c. In this connection we have made free use of the labors of Colonel Fitzwygram, an English cavalry officer, and the author of a valuable (allopathic) work, "Horses and Stables," which is frequently quoted in the following pages, and from which many important illustrations have been borrowed. In these surgical diseases the homœopathic treatment is usually alike simple and successful when once the particular affection, or its exact location, has been determined. And it is believed that the pages devoted to furnishing ample means for making such an exact determination and particular diagnosis of evident unsoundness in horses, will greatly enhance the value of this work.

It seems proper to refer, in this place, also, to the new remedies now for the first time introduced into a manual of veterinary practice. Among these may be mentioned Cimicifuga for chorea and rheumatic affections; Gelseminum for rheumatism; Glonoine for diseases of the brain, sunstroke ally; Phytolacca, specific for garget, and invaluable for rheumatic and throat affections; and last, although by no means the least, Carbolic acid, indispensable in glanders and every variety of zymotic disorders and parasitic skin diseases, useful also in malignant fevers, in putrid affections of the fauces, and in gangrenous ulcerations—employed internally and externally. The curative action of this truly homœopathic remedy, as recorded in the present work, marks a new era in veterinary practice.

Of the third, or Materia Medica, portion of this work, little more needs to be said here than merely to invite attention to its value and importance. To the preceding pathological and therapeutical division, it fully corresponds, presenting at length the characteristic symptoms by which the remedies are made capable of curing the disorders therein portrayed. But this third section does more than thus correspond to the second; for so complete is the statement given here of the specific effects of the medicines, that by means of a thorough study and knowledge of this section, the veterinarian may become prepared to treat with equal confidence and success varieties of disease either entirely new or not described in the present work.

In conclusion, we tender our hearty thanks to those who have supplemented our experience with their own, both with the new remedies and with the new forms of disease. From all these sources, from previous veterinary works, from homœopathic literature, from facts and recorded experience communicated by friends in different parts of the country and supplied by our own administration of homœopathic remedies to domestic animals for more than twenty years, we have endeavored to prepare a work which should be at once easily useful, practically valuable, and, above all, perfectly reliable. If these essentials shall prove to have been secured, we can trust a generous public to excuse, for the present at least, unavoidable imperfections and apparent deficiencies.

THE PUBLISHERS.

PREFACE TO THE SECOND EDITION.

The rapid sale of the first edition of this work enables the publishers to issue a second, which, it is believed, will be found more easy to use, as well as better arranged and more complete. This is owing to certain changes, improvements, and additions, which may be specified in brief as follows:

1. The Index is rendered much more full and copious, being enlarged in part by references to additional matter, from six to ten pages.

2. The numbers in the Index are now made to correspond to the pages, and not to the numbered paragraphs as in the former edition.

3. The additions to the work are contained in the final chapter, "Miscellaneous Disorders," extending from the 536th to the 557th page, inclusive (twenty-two pages), and embracing the following titles, either entirely new or supplementary to others already presented.

"Inflammation of the Foreskin; Gonorrhœa; Grooming; Fatigue; Overwork; Founder; Fistulas; Crib-Biting and Wind-Sucking; Balky Horse; Retention of Urine; Strangury in Horse, Dog, and Oxen; Pupura Hæmorrhagica; Influenza, or Epizootic of 1873; Rat's Tail; Chapped Feet; Pneumonia in a Cow, case; Inflammation of the Ear; Sheep Maggots; Gloss Anthrox in Pigs; Hog Cholera; Causes of Accidents and Diseases; Costing; Frightened Horses."

THE PUBLISHERS.

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[N.B.—O stands for mother tincture.]

Aconite O and 3.
Agaricus m. 6.
Ammonium carbonicum 6.
Ammonium causticum O and 3.
Antimonium crudum 3.
Apis mellifica 6.
Arnica m. O and 3.
Arsenicum album 6.
Asafœtida 3.
Aurum mur. 6.
Baryta carb. 6.
Belladonna 3.
Borax venet. 6.
Bromine 3.
Bryonia alba 3.
Calcarea carb. 6.
Calcarea phos. 6.
Calendula O and 3.
Cannabis 3.
Cantharis 3.
Carbolic acid O and 2.
Carbo veg. 6.
Causticum 6.
Chamomilla 3.
China officinalis 3.
Cicuta virosa 3.
Cimicifuga rac. 3.
Cina 3.
Cocculus indicus 3.
Colchicum aut. 3.
Colocynth 3.
Conium mac. 3.
Crocus sativus 3.
Cuprum acet. 6.
Digitalis 3.
Drosera 3.
Dulcamara 6.
Euphrasia offi. 3.
Ferrum mur. 6.
Gelseminum 3.
Glonoine 6.
Graphites 6.
Hamamelis O and 3.
Helleborus n. 3.
Hepar s. c. 6.
Hydrastis c. O and 3.
Hyoscyamus 3.
Hypericum O and 3.
Ignatia a. 3.
Ipecacuanha 3.
Kali bichromicum 3.
Kali carbonicum 6.
Kali sulphuretum 6.
Kreosote 3.
Lachesis 12.
Ledum p. 3.
Lycopodium 12.
Mercurius corros. 6.

VETERINARY HOMŒOPATHY.

CHAPTER I.

INTRODUCTION.

ADVANTAGES OF HOMŒOPATHIC TREATMENT OF DOMESTIC ANIMALS—OBJECT AND PLAN OF THE PRESENT WORK—PREVENTIVE TREATMENT—EXAMINATION OF ANIMALS—PULSE OF DIFFERENT ANIMALS—DIET OF ANIMALS DURING TREATMENT—FORM OF THE MEDICINES—POTENCY—DOSE—RULES FOR REPETITION AND SUSPENSION OF THE DOSE—EXCEPTIONAL CASES.

1. Advantages of Homœopathic Treatment of Domestic Animals.—The superior advantages of the homœopathic treatment of diseases of horses and other animals may be summed up in a few words:

Ease of Administration.—The doses being small and tasteless can be placed in the mouth of the patient with the greatest facility; or it can be induced to take them in a variety of ways without difficulty—in its food, or drink, or on a little sugar, which is equally grateful to almost every domestic animal; or the medicine may be mixed with a little water, and with a spoon, or horn, or glass prepared for that purpose, easily introduced into the mouth; or combined with milk, or meal, it will be speedily taken up by poultry and small animals.

Saving in the Cost of Medicines.—As the doses are smaller, so also are they less expensive; and in many instances this saving is very great.

Saving in Vital Strength.—This is a still more important item. The doses being less in size, their effect is not at all prostrating. When the animals have recovered from their first disorder, they are not obliged to spend in addition an equal or still greater amount of time in recovering from the debilitating effects of violent remedies—from some of which, indeed, such as calomel in drachm doses, they never can recover. Many working and pleasure-horses and cattle can be daily employed while taking homœopathic medicines for a variety of minor affections;

when, under the influence of the large doses of the ordinary treatment, they would be obliged to remain idle.

Saving of Life.—Barbarous and destructive as the allopathic treatment of human disorders is, its application to domestic animals, as usually made, is still more cruel and fatal. Many horses are annually destroyed by the old-fashioned practice, which would have recovered if simply let alone, and many others die of disorders that readily yield to homœopathic medication. In this connection it will be sufficient to point to the acknowledged *universal success* of the homœopathic treatment whenever tried in the late *epizootic*. Every sound horse that was treated homœopathically recovered; while thousands of others, equally sound before the attack of this epidemic, were sacrificed to the old-school veterinary practice.

Simplicity of Treatment.—From the ease with which the remedies may be administered, from the comparative minuteness of the dose, from the innocuous character of the medicines in the quantities recommended, and from the fact that each one is to be given by itself—no two or more remedies ever being mixed together in one prescription—from all these circumstances it results that the homœopathic treatment is exceedingly simple. Thus it can in a short time be learned and employed, with a success far superior to that of the best allopathic veterinary practice, by persons of not more than ordinary education and hitherto inexperienced, who will faithfully observe the rules laid down in this book for the examination of the sick and for the selection of the appropriate remedy. While those who have before made use of the large-dose method are delighted with the greater ease and certainty of their cures, and with the increased success which invariably attends their careful adoption of the new system.

Finally: *The Homœopathic Veterinary Practice is Most Thorough and Radical.*—By the use of gentle means nature is guided or rather stimulated to action in her own way, and her natural *instinct toward recovery is promoted*—being neither thwarted by opposing influences nor diverted into other courses by violent remedies. Thus it happens that the homœopathic cures are real, and not, as is too often the case in the old practice, merely the delusive seasons of quiet which intervene between the suppression of the former disorders and the appearance of the still more serious diseases which are sure, presently, to follow. Under the allopathic practice it is well known that men and other animals alike either acquire an increased disposition to the same particular forms of disease, such as pleurisy or rheumatism, for which they were treated, or become much more liable to disease in general, in consequence of the severe drug-medication to which they have been subjected. While under the homœopathic treatment men and other animals alike become less and less liable to the attacks of particular forms of disease, and less subject to disease in general; because they are here thoroughly and radically cured in harmony with the true physiological laws of their being.

2. Preliminary Remarks.—It is not a little favorable to the generalization of homœopathic treatment, that it has been first very extensively employed and approved upon the human species before the method has so universally been adopted in the management of inferior animals; and as the general features and manifestations of disease are approximately similar in all the higher grades of animal life, the experience already derived from human complaints is available in descending to the subordinate races. The great feature of homœopathic science, moreover, consisting in a thorough research respecting the nature and characteristic operation of every drug employed against disease, enables us to generalize the rules or symptomatic indications for the selection of the remedy, and to extend them to all the varieties of domestic animals; viz., the horse, ass, and mule, the ox and cow, the sheep, goat, pig, dog, poultry, &c.

The first exception to this general rule arises from the *peculiarity of particular complaints to a particular species.*

The second exception does not apply to the selection of the remedy, but to the quantity which should be employed, which holds good of different ages as well as of different species. The treatment of the same disease, when all are alike subject to it, will therefore be reduced under one head; and the distinctions between the treatment of different animals will constitute separate sections only.

The accessory treatment of each species will, however, differ in detail; and it will be necessary to devote brief separate sections to the particular method of managing each species. Inasmuch, however, as the purpose of this work is more especially the remedial treatment of disease (as its compass is necessarily circumscribed)—as there are already elaborate works devoted to the method of breeding, rearing, feeding, and managing cattle, and as these matters are already familar to most of our readers—we shall not occupy too much space with matters of this kind.

3. The General Plan of the Work.—In order to bring each department of the management of domestic animals distinctly and separately before the reader's attention:

Firstly, the general treatment of all animals (apart from the employment of medicinal agents against disease) has been concentrated within one general portion of the work, wherein have been included directions for the choice breeding, rearing, feeding, and general management of horses, cows, oxen, sheep, dogs, pigs, goats, mules, &c., poultry, ducks, geese, turkeys, pigeons, &c., &c.

The general indices of age, health, soundness, and the like, have been stated:

The construction of buildings adapted to various animals has been described;

And the precautionary treatment has been considered.

Secondly, the just discrimination of the particular nature of disease amongst the inferior animals being particularly difficult, owing to the absence of any means of distinguishing particular sensations, &c., and inasmuch as homœopathic treatment is dependent solely upon the nature of the symptoms and their conditions, and not upon the nominal classification of disease, a part of this work has been devoted exclusively to the consideration of the specific operation of certain medicaments, as exemplified by *careful and elaborate provings*, so that when any doubt exists as to the nature of the disease, the *appropriate* treatment may be clearly indicated by consideration of symptoms as exhibited by the pulse, skin, and external surface generally, eyes, nose, and nostrils, muzzle, mouth, teeth, gums, and throat, ears and horns, body, flanks, back, and belly, extremities generally, excrement and urine, breath, pulse, movements, &c., &c.

The article on the "Specific Effects of the Remedies" thus becomes the guide for the choice of the remedy, even when the nature of the disease has been thoroughly ascertained.

Thirdly, the nature and treatment of the diseases incidental to the inferior animals have been enlarged upon, so as to afford the reader every assistance in distinguishing between them; and the whole of the remedies, which have been homœopathically and successfully employed in each instance, have been briefly recited, with injunctions to refer to the article on the specific action of the medicaments so enumerated, for the selection of that whose specific medicinal operation is most closely analogous to the manifestations of disease.

Thus it will be seen that this work, subsequent to this introduction, naturally divides itself into three distinct, yet mutually co-operating parts: the first relating to the care of domestic animals in health; the second describing the principal forms of disease, accidents, and injuries to which they are liable, and the third containing the Materia Medica, or account of the remedies, with the characteristic symptoms which indicate their adaptation to particular cases. Under each form of disease will be presented first the medicines which experience shows to be most useful, and which are most remarkably indicated by their symptoms for those disorders. And the most prominent special indications of each of these remedies for that particular form of disorder will be at the same time subjoined.

In addition will be presented the names of other less prominent remedies, which have been employed, or may be indicated in the form of disease under consideration, and with respect to each of which the reader is referred to the Materia Medica for the particular indications which should authorize its employment in the case in hand. To the same treasury of the Materia Medica the reader is also referred always, even with respect to remedies, of which some characteristic indications are given under the head of "Treatment" in this therapeutical portion of the work. The object being to encourage and assist the reader to find in the Materia Medica a remedy, whose symptoms shall present the counterpart of those which are given in his patient's case. And the descriptions of the different forms of disease are thus seen to serve as a medium by which he may the more readily find in the Materia Medica the remedy exactly suited to his case. And the list of medicines subjoined to each form of disease, as well those with indications annexed as those without, must be looked upon in the light of a repertory or index to the Materia Medica for that particular disorder. By pursuing this course, carefully gaining an account of the actual condition of the patient, in the manner hereinafter to be described, and then finding, by the help of the therapeutical part of the work, the remedy in the Materia Medica which most exactly corresponds to his case, the veterinarian will be enabled to make cures quickly, easily, and certainly. And he will, by such study and comparison of the various remedies set down in the Materia Medica, acquire a practical knowledge of their respective virtues and powers, so that eventually he will as quickly and as surely know *from his own knowledge* what medicine will be required in any case which is presented for his advice, as the carpenter knows, without study or stopping to think for a moment even, whether he needs to use a saw or a hammer, a plane or a chisel. The medicines are the tools with which the physician works; instruments with whose use he becomes familiar by study and experience.

In the Materia Medica portion of the work will be found the *characteristic symptoms* of the remedies as respects various parts of the animal body, and a condensed *clinical summary* of the most important medicines is also added.

4. Of Preventive Treatment.—This is a consideration to which it is especially desired to call the reader's attention, and it should be borne in mind that, whenever a remedy is stated to be *directly specific*, it is also understood to be effectually preventive. Homœopathy alone can boast of the power of averting sickness, whilst it possesses the only direct and certain means of cure when disease has already accrued. But inasmuch as it is far better to avert it, if possible, when any disease is observed to attack many animals at once in one or more localities, or when it is observed to be communicated from one animal to another, the specific and preventive remedy will not be applied in vain.

Thousands of valuable animals are sacrificed every year to the ravages of endemic, or epidemic, or contagious diseases, and the owners never dream of seeking to prevent the induction of disease in sound animals, or to modify its virulence should it occur. They rest satisfied with having recourse to a few mischievous nostrums when disease has already done irreparable mischief to the animal. The homœopathist, however, will move in advance of the scourge, and the most severe of the epidemic diseases of cattle, such as murrain, abortion (in its epidemic sense), &c., yield with astonishing certainty to his precautionary measures. Homœopathy is destined to make a greater stride in the promotion of veterinary science than that which has already signalized its adoption in the treatment of human disease.

5. The Examination of Animals for the Detection of Disease.—The most casual observer may notice that something is wrong with a horse or other domestic animal, and still be unable to make such an examination as shall discover exactly what the trouble is. The following hints will show how this examination should be conducted; and in this and in the succeeding section sufficient data will be given to enable any one to point out what parts or organs are affected, and to determine in what respect, if any, and to what degree, the animal is diseased.

Firstly. Disease is distinguishable in animals by a *change* or *irregularity* in the general habits, such as those of rest and motion, of temper and of appetite. For instance, it does not follow because the animal is quiet that it is in sound health; for, on the contrary, if the animal be habitually restive, the sudden suspension of vice itself would become an indication of derangement; or, in the case of a horse, an impatience not customary with him during grooming, the snatching and starting of the foot when the pastern or fetlock-joint is touched, or when the hoof is examined, are all indications that he suffers from some injury or indisposition. Peculiar timidity is a very common effect of derangement with animals of all kinds; when, therefore, an animal appears frightened at the approach of those who usually attend upon it, there is reason to believe that constitutional derangement exists.

Secondly. Having ascertained, from any *change* or *irregularity*, as above described, in the habits of the animal, that there is derangement of some kind or other, we must next proceed to mark the details of such manifestation of derangement; namely, the particular symptoms, whether local or constitutional; and from the consideration of the indications present, and of the anterior circumstances, we may possibly also be able to trace the cause, and thereby to judge more positively of the features of the case.

Constitutional Symptoms.—As in the cases of human beings, our attention is directed to the pulse and to the beatings of the heart, which are the truest indices to the condition of the vascular system; we observe the mouth, the state of the tongue, gums, the dilation, discharge, or burning dryness of nostrils, &c.; we examine the eyes, from which we may most easily deduce the symptoms connected with the cerebral system—whether from the expansion or contraction of the pupils, the convulsive distortion or savage fierceness of the eye—whether the eye is sunken or protruded, and what (if any) be the irregularity in color; the increase or decrease of natural heat, whether general throughout the frame or confined to the extremities, or to particular parts; we endeavor to distinguish the part from which the animal suffers most, which we may observe by its kicking at such part or endeavoring to touch it with the nose, snout, or tongue, or by lashing with its tail, as also by its avoiding contact, and being timid of our approach to the part so affected; we observe the skin, which is frequently an important index of disease, as to the condition of the hair or fur, the sensitiveness to the touch and any inequalities of surface; and frequently, also, in animals which have little covering on the skin, as to the discoloration, which is invariably an unhealthy sign. The hair of the horse, especially in summer, should lie close to the skin, and be smooth and glossy; when rough, and standing on end, it is indicative of derangement. We should also remark the respiration, with respect to foulness, frequency, equality, or inequality, facility or evident impediment, emission of sound, hoarseness or whistling; as also the sounds expressive of suffering emitted by the animal. We should seek an occasion to notice the process of feeding, for instances in which animals wholly abstain from food are very rare; and we judge of the state of the digestive apparatus rather from the apparent relish, distaste, or daintiness with which the food is sought, and from the facility or difficulty of deglutition, than from the absolute absence of appetite. We examine the nature of the excrements and urine, the former being characterized in the horse by being detached in small and imperfect quantities, bullety, dry, and of a light color during inflammatory action; whereas they are copious and slimy in the majority of cases of a low, depressed, or typhoid character. The general aspect of the animal should be remarked and considered relatively to age, temperament, particular species—whether male or female—the general circumstances, and the particular forerunning circumstances. In the cases of ruminating animals, especially horned cattle, the carriage and averseness to motion alone are sufficient to indicate disease; the head is hung down, the animal maintains a recumbent posture, and appears averse to motion, and in a prostrate condition, and it neither browses nor ruminates, &c., &c. The excremental discharges, also, are of a totally different aspect, occasionally violently relaxed, but more frequently insufficient, hard, and black. The sheep should have smooth, soft, and even wool; patchiness and sores on the skin are bad signs; the eye should be bright, the head carried high; the motions unimpeded and readily evacuated; the breath sweet, and the nostrils clean; difficult evacuations, a dull and half-closed eye, a drooping head, foul nostrils, offensive breath, foulness of the mouth, and absence of the characteristic redness of the mouth and tongue, uneven, rough, or hard wool, &c., &c., are distinct and unmistakable signs of disease. It must not be forgotten, that in all diseases, of whatever species, the *particular conditions* accompanying the *symptom*, or *group of symptoms*, to which our attention has been called, is that which *qualifies* and characterizes the whole case, and, therefore, that we cannot take too much pains to mark the minutest details, not only in the symptoms, but in the

Conditions of permanency;
" of amelioration or suspension;
" of palliation or return;
" of aggravation.

As, for instance, if any of these circumstances are observed to follow *immediately* after motion or rest, or *some time after the commencement, and during the continuance* of a condition of motion or rest; or whether any particular circumstance of the kind occurs at night or in the morning, after swallowing food or drink, and the like.

Symptoms of Local Affection or Injury.—When the evident presence of some irregularity has called our attention to the condition of an animal, and after close investigation we have ascertained the *presence of local symptoms*, but the *absence of attendant constitutional derangements*, we conclude that the affection is of a purely local character. As such it may arise from an external or mechanical injury, viz., a sprain, strain, blow, concussion, fall, cut, bite, kick, &c., &c., or from exposure of the part affected to the action of some noxious substance or influence; as, for instance, in inflammation of the eyelids, &c., &c. Affections of this nature, when very slight, may often be disposed of by *external and purely local* treatment; but *when the extent of the injury, or of its consequences, is in the least degree problematical, it is always advisable to submit the animal to concurrent constitutional treatment.*

6. The Pulse and the Method of Ascertaining its Nature in Domestic Animals.—As already stated under the general head of "Examination and Detection of Disease," the pulse, which is so important an index in human beings, is perhaps a still more indispensable guide in the treatment of animals, which have no power of conveying an accurate idea or *history* of their sufferings. But, in order to judge correctly of the value of this index, it is necessary to have obtained some standard whereby to distinguish the unhealthy from the healthy action of the apparatus of circulation. And it must again be repeated, that in the treatment of animals the *perception* of disease is more essentially *comparative*—*i. e.*, with the condition of health—than in the management of human complaints; wherefore it will be readily understood that we cannot have so many *differential* particulars relating to *individual* constitution; and that we must depend more upon generalities, or, if they may be so termed, the statistics relating to the pulse of animals.

The healthy pulse varies in strength and rapidity, not only in different species of animals, but also in different varieties or breeds of the same species.

It must also be observed that the *method* of trying the pulse is most essential, because it is not only important to number the pulsations to time, but also to ascertain the *nature* of the pulsation; as, for instance, whether it be *bounding*, *full*, and *hard* (offering a strong resistance to the touch), small, being also generally *hard* (conveying the like sensation, but as if the current were suddenly checked and incomplete), *oppressed* (conveying the idea of passing with difficulty into vessels already overcharged), *weak* (or yielding to the touch, and apparently powerless to force the resistance of the touch), wiry, or thin, &c., &c., or, in fact, indicative of any peculiarity dissimilar to the habitual pulse of the animal. It must, however, be borne in mind, in estimating the nature of the pulse as the index of disease, that any sudden cause of excitement, any violent exertion just completed, and a variety of external causes which would tend to flurry the animal, would operate to accelerate the pulse. In cases in which any such cause of momentary irregularity has manifestly been present, it were always desirable to await the subsidence of the emotion or excitement before we proceed to examine the animal.

7. The Pulse of the Horse, the Ass, and the Mule; its Natural Standard; the Mode of Ascertaining its Frequency, and Statement of the Remedies which correspond to its Morbid Conditions. —*Mode of Ascertaining the Condition of the Pulse:* The best method of judging of the peculiarities of the pulse, as well as of its frequency, is by pressing the artery of the nether jaw, in the cavity close to the throat, upon the bone, with the two fingers, as by this means the touch will convey an accurate idea of the *nature* of the pulsations as above described. The submaxillary artery passes over the lower jaw, and enters a groove about three inches from the angle of that bone in the horse. The old method of applying the hand merely to the left side, and judging from the beating of the heart, is very imperfect, because, although by this means the frequency can be ascertained, it would only be in cases of extraordinary irregularity that the touch would communicate the particular denomination of the pulse.

The expedient of resorting to the heart for guidance must not, however, be altogether overlooked, inasmuch as it is by careful examination that we are secure of not overlooking any minute feature or irregularity, and because we frequently derive much assistance from an accurate comparison between the action of the *heart* and that of the *lungs*. It should also be mentioned that circumstances not unfrequently occur which render the cognizance of the pulse at the jaw impossible. This comparative regularity or irregularity will frequently render important service to the cognizance of the case.

The frequency of the pulsation of the heart, as respects that of the respiration in a healthy adult horse, is approximately as four to one. The perfect respirations take place about ten times to the minute.

The Natural Standard or Healthy Pulse of the Horse.—The healthy pulse of adult horses varies slightly in different breeds, but is almost wholly uniform in the same particular variety. The smaller varieties of horses have usually a more accelerated pulse, and this rule is also applicable to the higher breeds. The heavy labor- or farm-horse is characterized by a more sluggish circulation.

The colt is also distinguishable for a more rapid pulsation, which gradually approximates to the general standard from the second year to the period of maturity or fifth year.

The numerical standard of the labor- or farm-horse is from 35 to 40 pulsations in the minute; in the smaller varieties and in the higher breeds this standard may be stated at from 40 to 45 pulsations in the minute; for the colt it appears to be recognized that the frequency varies from 45 to 55 in the minute.

An accession of ten pulsations above the maximum of the ordinary standard may be considered as indicative of more or less constitutional disturbance, which may be liable to continue on the increase unless arrested by seasonable treatment.

When the acceleration ranges from 25 to 30 above the maximum of the standard, we have reason to apprehend untoward consequences, and an increase of from 50 to 60 pulsations above the maximum before stated is always to be looked upon as imminently critical.

The Natural Standard or Healthy Pulse of the Mule and Ass.—Subject to the same exceptions and conditions as already enumerated respecting the horse as regards age, breed, &c., &c., the average number of pulsations of the adult MULE in a healthy condition ranges from 42 to 48 in the minute; and of the Ass from 48 to 54.

Of the Peculiarities of the Pulse and the General Indications afforded by Them.—A pulse which is *simply quickened*, or which is *hurried* without any additional distinctive features, would indicate the selection of *a remedy appropriate to the other symptoms characterizing the case*, if possible, from amongst the following: *Aconitum, Arsenicum, Belladonna, Bryonia, Colocynth, Hyoscyamus, Mercurius, Phosphorus, Pulsatilla, Secale, Silicea, Spongia, Sulphur.*

A *hard* pulse would similarly indicate the selection from amongst the subjoined list: *Aconitum, Belladonna, Bryonia, Cantharides, Hyoscyamus, Nux vomica, Phosphorus, Stramonium, Sulphur.*

A *full* pulse should lead us similarly to choose our remedy from amongst the following, which particularly cover that characteristic:

Aconitum, Belladonna, Bryonia, Camphor (especially if *much* accelerated), *Colocynth, Ferrum. Hyoscyamus, Lachesis, Nux vomica, Opium,* *Phosphorus, Pulsatilla, Sambucus, Secale, Sepia, Spongia, Stramonium, Sulphur, Tartarus emeticus.*

A pulse which betrays the sensation described above as attributable to *oppressed* circulation would lead to a selection from the subjoined list:

Belladonna, Bryonia, Hyoscyamus, Mercurius, Nux vomica, Opium.

A peculiarly *retarded* and *small* pulsation would point particularly to *Camphor.*

A pulse especially answering to the characteristic denomination of *small,* would point to the following as the remedies from which (the assemblage of symptoms permitting) the selection should be made:

If accelerated,—*Aconitum,* ARSENICUM, *Belladonna, Cantharides, Hyoscyamus,* LACHESIS, *Mercurius, Nux vomica, Phosphorus, Secale, Silicea:* if retarded,—CAMPHOR, *Cuprum a.,* DIGITALIS, VERATRUM.

A *slow* pulse would similarly indicate a choice from amongst:

Camphor, China, Cuprum, Digitalis, Opium, Pulsatilla, Rhus, Sambucus, Veratrum.

An *intermittent pulse* would generally indicate such remedies as follow, if otherwise characterized:

Arsenicum, Lachesis (if scarcely perceptible as well as intermittent), *China, Digitalis, Mercurius, Natrum muriaticum, Nitric acid, Nux vomica, Opium, Phosphoric acid, Secale.*

An *imperceptible* pulse, or one of which excessive feebleness constitutes the characteristic, should lead to a choice from amongst:

ARSENICUM, CARBO VEGET., CAMPHOR, *Cuprum a., Muriatic acid, Opium, Phosphoric acid, Rhus, Sambucus, Tartarus emeticus, Veratrum.*

A *soft* pulse, or one such as is described as *yielding to the touch,* would be characteristic of the following remedies:

Carbo vegetabilis, China, Cuprum a., Veratrum.

A *tremulous* pulse, such as would accompany or result from nervous fevers of a low type, especially if it be the attendant symptom of a disease which has generated from the inflammatory to the typhoid type, distinctly points to:

Arsenicum and *Rhus* (more particularly), and to *Cicuta, Mercurius,* and *Tartarus emeticus* (secondarily).

8. The Pulse of the Ox and Cow.—*Mode of Ascertaining the Condition of the Pulse:* Owing to the peculiar construction and course of the artery of the lower jaw, it is far more difficult to distinguish and to feel it than in the horse, and it is very frequently also quite impossible to render the pulsation appreciable at that point. The artery of the temple is, however, not only more prominent and larger in the ox than in the horse, but extends over a more exposed surface. It is there, then (next to the expedient of applying the hand to the side), that the pulse will be most easily distinguishable. The common practice is to feel the pulsation of the heart, although that is never so satisfactory a method, as has already been explained. But, in the instance of the ox, where the *temporal artery* (not that of the lower jaw) becomes the point of examination, we have not such positive facilities to compass exactly the *peculiarities* of the pulsations.

The Natural Standard or Healthy Pulse.—With reservations and particulars, respecting age, breed, &c., similar to those already described under the head of the "Pulse in the Horse," Title 7, the average number of pulsations in a healthy adult ox, or cow, ranges from 35 to 42 in the minute.

In all other particulars the same general rules apply, as have already been enumerated and detailed in regard to the pulse of the horse.

9. The Pulse of the Sheep and Goat.—*Mode of Ascertaining the Condition of the Pulse:* In order to render the nature of the pulse perfectly appreciable to the touch in examining SHEEP, &c., it is requisite to have recourse to the artery which extends athwart the inner side of the thigh, and is known by the name of the *femoral artery*. Here the pulsation will be perfectly palpable, and the artery being susceptible of such compression with the finger as to elicit the peculiarity of the circulation by the touch, the distinct characteristic feature will be ascertainable. The same method, also, as holds good of all animals, namely, that of feeling the pulsation of the heart, is available in the treatment of SHEEP, &c., and will serve so far as the *frequency* is concerned, besides being useful in studying the comparative regularity of circulation and respiration.

The Natural Standard or Healthy Pulse.—With reservations, conditions, exceptions, and particulars respecting age, breed, &c., &c., such as those already cited in treating of the HORSE (Title 7), the average number of pulsations in a healthy adult SHEEP will range from 65 to 75 in the minute (or, according to some authorities, from 70 to 80), and in the GOAT from 70 to 75.

In all other particulars the same general rules apply as have already been enumerated and detailed in Title 7.

10. The Pulse of the Dog.—*Mode of Ascertaining the Condition of the Pulse:* This is done most efficiently, as respects all the niceties involved in the peculiar nature of the pulsations, by applying the two fingers to the inner side of the knee, where the current will be compressible, and capable of communicating its characteristics to the touch. The heart may also be felt when only the frequency is to be ascertained, or when it is desirable to institute a comparison between the circulation and respiration.

The Natural Standard or Healthy Pulse.—There is no domestic animal which is subject to a greater number of exceptions, in respect of the *frequency of pulsation*, than the Dog, because, although the various breeds of all animals are subject to slight discrepancies in this particular, there is no domestic animal of which two different varieties will be subject to so wide a difference. We, moreover, not only observe a difference in the frequency, but in the vigor of the pulse; and this is not a little attributable to the endless variety in the habits to which Dogs are trained, and in which they are reared and sustained. As a general rule, however, we may state the average number of pulsations in the healthy adult Dog, as varying from 80 or 90 to 100 in the minute.

The general exceptions as to age, &c., hold good, as stated in Title 7.

11. **Of the Diet of Animals during Treatment.**—With the inferior animals (except, indeed, those which are pampered for the amusement of the proprietors), few and simple dietetic regulations only become necessary. The refinement of civilized people has rendered the catalogue of food for use or for avoidance, on either hand, very copious; but for subordinate animals, or indeed for mankind in a condition of nature, the necessities being the only indicators for the choice of diet, we have, with few exceptions, but to tender the natural and habitual food, which will rarely be eaten if the animal be not in a fit state to digest it. There are comparatively few instances of animals eating that which provoked or aggravated derangement, especially during the prevalence of an affection of any intensity which could involve the digestive functions; but, lest circumstances and artificial appliances should so far have modified the natural instinct as to provoke the animal to consume food which is noxious to it under particular and present conditions of derangement, it were as well to avoid tendering to it food of such a nature under such circumstances; as, for instance, raw grain to a horse laboring under inflammatory action of any kind; or raw flesh, fat meat, seasoned food, or the like, to a dog under similar circumstances; or stimulating food, or promiscuous wash, to a pig under sim-

ilar circumstances. The horse should be fed upon sweet hay, or bran-mashes, in moderation, and pure water, sometimes slightly warmed; the dog, upon light soaked biscuit, with the addition of a fourth part of meat, or liquor of meat, quite plain and unseasoned; or mixed animal and vegetable food, in like proportions, also plain and unseasoned, all equally in clean vessels and in moderate quantities, and, above all, *cold*, and not more than twice in the day, care being taken to provide an abundant supply of pure water; the pig should have bran or the like substituted for barley-meal (if that be the customary food), and waste milk may take the place of mixed washes.

Ruminating animals, such as the ox or cow, and sheep, may be cited as a general exception to the rule, that animals rarely, if ever, eat to excess, or of noxious food. With these, therefore, considerable caution must be observed, in feeding often and sparingly, and in withholding rich, young, green, and succulent food. Fine turf grass, good sweet hay, and dry food generally should be substituted for fresh. The addition of salt with the food of the sheep is very essential; and oxen, as indeed all the animals above enumerated, require an ample supply of pure water.

With respect to the distinctive treatment of each species, or class of species, in respect of diet, more particular detail will be afforded under the head of each species or class respectively in a subsequent chapter. In this place we are only concerned to enunciate the general rule, that the most important consideration in the feeding of animals during disease, is to provide them with diet as simple, natural, and consistent with circumstances as possible—perfectly clean and untainted, in small quantities, and at regular periods.

12. Of the Selection of the Remedy.—The selection of the remedy must depend upon the assemblage of symptoms *characterized by being associated*, and *by distinctive conditions*, which constitute the indication for its use, as hereafter detailed, after the citation of every remedy, under the head of each disease; and also in the "Summary of Characteristic Effects and Indications" of the remedies prescribed throughout this work.

The most important remedies under each form of disease will be particularly mentioned, with some few of the principal indications for each remedy in that disease. Other medicines, mentioned without special indications, under special disorders, should be carefully examined in the Materia Medica portion of this work. By the combination of these two methods, the general "Summary of Characteristic Effects" and the special indications under particular forms of disease, it is believed that ample means are afforded for selecting the remedy exactly suited to each individual patient, and after some experience this labor becomes very much easier.

If there be any particular and characteristic feature in one or more symptoms which corresponds exactly with the operation of *one remedy*, whereas that remedy covers the aggregate assemblage of symptoms but imperfectly, we should have recourse to the *one remedy* so indicated, in *alternation with* or *succeeded by* one or more others, so that the whole together embrace the aggregate group. Thus, by alternate or successive administration, will the distinctive feature of the case, as well as the entire range of development, be most effectually covered.

But as an essential *exception to this rule* it should be observed, that the *alternate or successive remedies should not be adopted if, by the administration of the first, the character of the symptoms has been so far modified as to indicate the employment of another remedy yet more characteristic of the new aspects of the case.*

For inasmuch as when the remedy first employed covers only a portion of the symptoms, it engenders or promotes the development of latent features, which are attributable to its own specific action, it is yet to be understood that these new developments do not appertain to the medicine irrespective of its relation to the disease, but rather to the disease in respect of its treatment. So that when the remedy selected is really *characterized* by any one feature of the disease, although it be but an imperfect agent in other respects, it does double service by operating specifically against the feature which represented it, and by bringing to light secret characteristics, of which we may afterwards avail ourselves.

It not unfrequently occurs, in cases in which a remedy is administered and fails, which, upon repeated consideration of symptoms is found perfectly in accordance with the characteristic features of the disease, that the administration of a remedy of *analogous character* will be followed by the most signal success. In cases which appear to fall within this category, the reader is referred to the "TABLE OF ANALOGOUS REMEDIES."

13. **The Form of the Medicines.**—Homœopathy offers a variety of forms in which the medicines may be preserved, and from which the doses may be administered. The globules or pellets are approved by many, and have the advantage, as is supposed, of more secure preservation. But the medicines put up in the liquid form, as dilutions,

afford equal facility for giving out the doses, and these latter are also much more efficient in general practice. And for this reason, and because so much larger quantity of medicine may be contained in the same bulk, it has been thought best to employ this form altogether, both in advising the doses suitable for the sick, and as furnished in the box of medicines which is prepared to correspond to this work. There is, indeed, one disadvantage which attends the liquid form of the medicines; this is their proneness to evaporate, especially in warm weather. But this can be guarded against, and in a great measure prevented, by securely corking the vials whenever they have been opened, and by always keeping the box in a cool place and tightly closed. The box for greater security should always be deposited in another box, chest, or trunk, which latter also must be kept locked, to avoid the possibility of the medicines being trifled or tampered with. New corks may be put in from time to time, as the old ones become less secure. Should any vial of medicine, from use or evaporation, run very low, a new vial of the same medicine should be at once ordered to replace it. Promptness and efficiency of action are the principal and indispensable qualities of medicines; and since the liquid preparations secure these in the highest possible degree, the greater weight of advantage is surely on their side. And even if the remedies require to be oftener replenished, their much greater activity and superior reliability will much more than compensate for any possible increase of expense.

14. The Potency.—For most of the remedies it has been found that the *third decimal* dilution of the vegetable preparations, and the sixth decimal of the minerals and other drugs, fulfil the indications in most disorders. Some few medicines, however, require to be used also in still larger doses in certain cases, such as Aconite, Camphor, Carbolic Acid, and Rhus; others again are needed for external application as well as for internal use. The former are put up in the first dilutions; the latter in the mother tinctures. The strong odor of some of these medicines, and the larger-sized vials required for all of them, render it necessary that these two classes of remedies should be put up in a box separate from those intended to be administered internally and in the usual manner. In this way the greatest good is believed to be obtained by simplifying the whole practice as far as possible, especially for those first beginning to use these remedies, who would be confused and embarrassed rather than assisted by a variety of potencies; while those more experienced, who desire other preparations, whether higher or lower, or even to have the medicines put up in pellets, can readily procure them on application to the publishers of this work.

15. The Dose.—The dose should vary according to the nature of the disease, the age, sex, condition, and bulk or power of the animal; and also for different species, equal in bulk, power, age, sex, and in all the qualifying conditions of circumstance, but of more or less lively susceptibility: as, for instance, a much larger dose is required by the ox than by the horse, and a larger dose again by the robust heavy labor horse than by the racer or hunter. In respect of disease there are three classes of disorders, conformably with which the dose must be qualified,—*acute and critical, acute but not critical,* and *chronic diseases.* In *acute and critical diseases,* amongst full-grown horned cattle, the dose may consist of five drops of the dilution, or tincture, in one pint of water. In *acute diseases, not critical,* three drops may be given for a dose in one pint of water. In *chronic* diseases a similar dose may be given but once or twice a day.

The dose given to the young, before the period of weaning, should not exceed the proportion of one-third of that for the adult animal, and about two-thirds, as a general rule, from the period of weaning until the third year. The dose, administered as above stated, dissolved in the same quantity of water, to adult horses, has been in the proportion of two-thirds and one-half of that stated for the adult horned cattle. The dose for sheep, also in solution, may be stated as equivalent to that denominated for the horse. The dose, for full-grown dogs used for purposes of sport, or for hardy full-grown dogs in general, should consist of one drop, dissolved in a wineglassful of water; or to their young before weaning, one teaspoonful of such a mixture may be given; and from the period of weaning until the second year two teaspoonfuls of such a mixture may be given for a dose.

In acute and critical diseases, the doses for the respective ages above enumerated may consist of three, two, and one teaspoonful of a mixture made by dissolving ten drops of the dilution in half a pint of water.

The dose for full-grown animals, such as lap-dogs, cats, and the like, which are kept within doors, should not exceed one teaspoonful of a mixture made by dissolving six drops of the solution in one pint of water, and a much smaller quantity may suffice for the young of these animals; ten drops, for instance, of such a solution. The maximum dose for critical cases should be limited to about double these quantities in each age and condition.

These doses may, in every case, be repeated in one, two, or three hours, according to the severity of the case, as subsequently stated.

The medicines may be given by placing the mixture on the tongue of some animals; by dropping the drops of the dilution directly upon a little sugar for horses and dogs; or the mixture may be prepared with a little meal for poultry, or in drink.

For animals, such as cats, which will take milk when it is offered to them, it has been found convenient to dissolve the medicine therein, as the least troublesome method of administering it.

But, inasmuch as it would seem to result from long experience, that the most efficacious method of administration is the solution in water, that method will be found prescribed throughout this work. And as the dose will be explicitly stated, after every remedy prescribed in each direction for treating disease, it will be unnecessary to enter into greater detail on the subject here. Moreover, be the directions as positive and explicit as they may, they must be understood to be subject to any particular exceptional conditions which may arise in a particular case. Lastly, with respect to medicines *administered in solution*, it is advisable to mix a fresh solution for administration in all cases in which an interval of more than forty-eight hours intervenes between doses; and also in all cases in which the care of the medicine is intrusted to subordinates, whose scrupulous attention cannot be relied upon. The solutions should always be kept covered, to protect them from the dust and prevent their absorbing impure matters from the air, and they should be placed in a cool situation. Cups and spoons after being used should be cleaned in HOT water.

Finally, with respect to the dose, it must be remarked that, while these directions are set down as the best that can be given in general, and in advance, and as such are intended to afford a much-needed guide to those inexperienced, *those who have experience should exercise their own judgment always in the presence of their patients, both as to the size of the dose and as to its repetition.*

16. Of the Recurrence or Repetition of Doses and Exceptional Conditions.—It is impossible to give a general and positive rule respecting the repetition of doses, which should evade all exceptional conditions. Of the two, indeed, it is doubtful, whether the exceptions would not apply to a greater number of cases than the rule. In very many cases one dose of the remedy, which is distinctly homœopathic to the disease, will suffice to subdue it, and in such cases as these the repetition is worse than useless. Whereas, in other cases apparently similar in every respect, but governed by different and unobserved conditions, a reiterated repetition becomes necessary, the disease resuming its ascendency as soon as the action of the remedy is expended. Moreover, the periods of recurrence will be particularly stated under the head of "Dose," after every medicine prescribed in this work, in so far as it is possible to set a positive limit to the greater or less duration of influence exercised by the medicament. But in order, if possible, to epitomize the whole, and to condense all general and particular directions, and all apparent exceptional conditions, so as to bring them simultaneously under the reader's notice, we will here prefix a summary of the *general rules* and *exceptional conditions* which should govern the administrator in his treatment. The frequency of the doses, or the length of interval between them, must first of all be governed by the general character of the disease; and the better to define the rule, we shall once more divide the treatment into that of disease in three forms,—*acute and critical*, *acute but not critical*, and *chronic*.

In Acute and Critical Disease.—The interval between doses in *acute and critical disease* is quite arbitrary, and must be governed by the urgency of the case. The length of the interval will vary, according to circumstances, from *five* to *sixty minutes*. The intervals would, however, require to be extended as soon as distinct signs of amelioration became manifest, and if after *one dose* had been given subsequently to the improvement, such improvement continued progressively, it would be advisable to abstain from repeating the dose until the amelioration had reached a stationary or unprogressive point, or until signs of retrogressive action became apparent; when, if the *characteristics* of disease remained the same, it would be desirable to resume the treatment with the *same remedy*, or if new *characteristic* features had transpired, it would be desirable to select *another* and more appropriate remedy wherewith to resume treatment. (See "Exceptional Conditions.")

In this second course of treatment, however, it would not be necessary to return to the short intervals, unless urgent symptoms demanded such a proceeding. The interval should, if possible, be extended to three hours.

In cases of aggravation, or of no change whatever, following the treatment at any period, see "Exceptional Conditions."

In Acute Disease not Critical.—The minimum length of interval, in *acute disease not critical*, may be stated at three hours, and this length of interval should be doubled on the first appearance of improvement.

If, after the first dose, at the second interval, the improvement continued steadily progressive, it would be advisable to suspend the treatment until the amelioration had attained a point at which the symptoms became stationary or retrogressive, when, if the *characteristic* features of the disease remained the same, it would be desirable to resume the treatment with the *same remedy;* or if new *characteristic features* had transpired, it would be advisable to select *another* remedy conformable to the new aspect of disease, wherewith to resume the treatment. (See "Exceptional Conditions.")

The minimum length of the intervals between doses in this second course may be stated at six hours, unless symptoms of a very acute character should supervene to indicate more active treatment.

For cases in which no change of any kind, or aggravation follows treatment, see "Exceptional Conditions."

In Chronic Disease, with the Presence of Intervening Acute Symptoms.—In cases of this kind, the length of the interval between doses may be stated generally at twelve hours, this period being doubled as soon as apparent improvement ensues; after which, we should suspend treatment until the return of active symptoms should take place, when, if the *characteristic* features of the disease remained the same, we should resume the treatment with the *same* remedy, or, if new *characteristic features* became manifest, it would be desirable to select *another* remedy, in accordance with the new symptoms wherewith to resume the treatment. (See "Exceptional Conditions.")

The least length of the intervals in this second course may be stated at twenty-four hours, unless the symptoms should be so severe as to render more active treatment necessary.

For cases of aggravation, or of no change whatever, see "Exceptional Conditions."

In Passive Chronic Disease.—The same rule applies to cases of this kind, as to the former species of *chronic disease,* with the exception that the minimum length of interval, during the first course, should vary according to circumstances, from three to seven days (followed by a suspension of from seven to ten days), and in the second course from seven to fourteen days.

In Cutaneous Diseases, in particular, when they assume this aspect, the intervals between the doses should be very long. A single dose, allowed to extend its action over a period of six weeks, has in many cases been found more serviceable than reiterated treatment.

Exceptional Conditions and Antidotes.—In the course of or after the administration of every remedy, one of two things must necessarily ensue:

1st. Either there must accrue a change in the state of disease;

2dly. Or the disease must remain unaltered.

And a change in the state of disease implies one of three things:

1st. Either that amelioration has taken place;

2dly. Or aggravation;

3dly. Or that the symptoms, singly or in the aggregate, present a different aspect.

In cases of amelioration, the course has already been directed above.

For Change of the Medicament.—If no change has taken place, or the disease remains unaltered, as suggested in the second of the former two alternatives, we should proceed according to the subjoined directions respectively:

In Acute and Critical Disease.—When the symptoms are extremely urgent, and the animal is sinking, notwithstanding repeated doses of a medicine, extending over the lapse of thirty minutes, we may be justified in selecting another remedy, as nearly conformable to the symptoms as possible, and in continuing the treatment with such remedy, after a lapse of fifteen minutes since the administration of the last dose of the former medicament. If this new remedy be followed by amelioration, we should at once extend the intervals, or suspend treatment, as directed in the "Rules for the Repetition of Doses," above; if, again, no change accrue, reconsult the symptoms once more.

In Acute Disease not Critical.—The ineffectual administration of a remedy, in repeated doses, extending over an interval of twelve hours, and followed by *no results at all,* will warrant the selection of another remedy for administration after *twelve hours* from the *last* dose of *former* medicament. If amelioration follow this treatment, extend the intervals, or suspend the treatment, as before directed; if, again, no change accrue, reconsult the symptoms once more.

In Chronic Disease, with the Presence of Intervening Acute Symptoms.—The administration of repeated doses of *any remedy* selected, extending over a period of three days, and followed by *no results at all,* should be a sufficient ground for the selection and administration of another remedy after forty-eight hours from the last dose of the *former* medicament. If amelioration follow this course, extend the intervals, or suspend treatment, as directed above. If no change accrue even yet, reconsult the symptoms for the choice of a third remedy.

In Passive Chronic Disease.—These cases are subject to the same exceptional regulations as the foregoing, excepting as to the time. Here, the first course directed to be administered in the "Rules for the Repetition of Doses" should be fully completed, and an interval of seven days should have been allowed to elapse since the last dose of the *former* remedy, before the adoption of a *new* one.

Conditions for Suspension.—(1.) *Aggravation and Antidotes.* When the administration of any remedy is followed by a sudden, distinct, and unnatural aggravation of the symptoms, of such accelerated action as clearly to point out a medicinal operation, we should at once *suspend all treatment*, to allow the reaction to effect itself, and the medicine to exhaust its influence; except, indeed, such aggravation be so severe, or last so long as to prejudice the case, when we should have recourse to—

The Antidote.—Antidotes to homœopathic remedies, according to the most recent experience, and to very high authority, may be summed up under two heads,—*suspension of treatment* (which we have already mentioned), and *the repetition of the same medicine, at an opposite potency, and in a less dose;* that is, if the aggravation has followed the administration of six globules of the thirtieth dilution, we may administer three of the first or third potency, and *vice versâ.*

(2.) We should also suspend treatment in cases in which improvement is steadily progressive, as above directed, in the "Rules for the Repetition of the Dose."

Conditions for Resuming Treatment.—These conditions consist, as before stated, in the reascendency of disease, and the selection of the remedy may fall upon the same as was previously employed, or upon some other, according to the existing symptomatic indications.

CHAPTER II.

OF THE CHOICE, TRAINING, BREEDING, FEEDING, ACCESSORY TREATMENT, AND GENERAL MANAGEMENT OF DOMESTIC ANIMALS AND FOWLS.

WE come now to the choice, training, breeding, feeding, accessory treatment, and general management of domestic animals, which will form the subject-matter for this chapter; and we shall commence by briefly setting forth the general rules to be observed in these particulars with respect to the horse, proceeding, in subsequent sections, to treat of the other animals in question, under distinct and separate heads, according to the importance attached to them for general purposes, or to the space afforded us within the limits of a work of this nature, and the materials which we can command respecting them.

SECTION I.

17. **Of the Horse.**—In this country, which is as remarkable as any other for the beauty, power, speed, and general capability of its horses, this, the noblest of domestic animals, holds undoubtedly the first rank, and deserves the first attention. We may divide the varieties of horses in general use or estimation into five kinds, exclusive of ponies, namely: The Race Horse, the Hunter, the Saddle Horse for the road, the Carriage Horse, and the heavy Draught Horse. The other subdivisions are merely composed of two or more of these in the same animal, according to the convenience and adaptation of the proprietor.

Of ponies, we may say generally, that there is no particular rule as applied to their selection, breeding, feeding, or general management, which will not fall within the specifications hereinafter subjoined respecting one or more of the other descriptions; except it be that, as a general rule, they are more *hardy*, and require less attention.

Of race horses, it may be stated generally, that, saving as respects their training for the turf (of which hereafter), they are subject to the same general rules for treatment, &c., &c., as we shall have occasion to enumerate under the heads of other varieties. We will, therefore, proceed with the hunter.

18. **Brief and Simple Rules for the Choice of a Hunter.***—Choose, if possible, a three-part bred horse, between fifteen and sixteen hands high, a match for your weight. The foot should be sound and ample, and, above all, there should be no tendency to turn the toes inward; there should be tolerable width in the profile of the leg from the shoulder downwards; the fore leg should be straight; he should bear lightly on the hand, the head being carried so as to obviate much strain on the reins; the body should be firm, expansive, and bulky; the chest broad; the legs short; the fore hand higher than the hind quarter; the back and body short, and closely knit; the hocks supple; the loins expansive; the general development of the hind quarters

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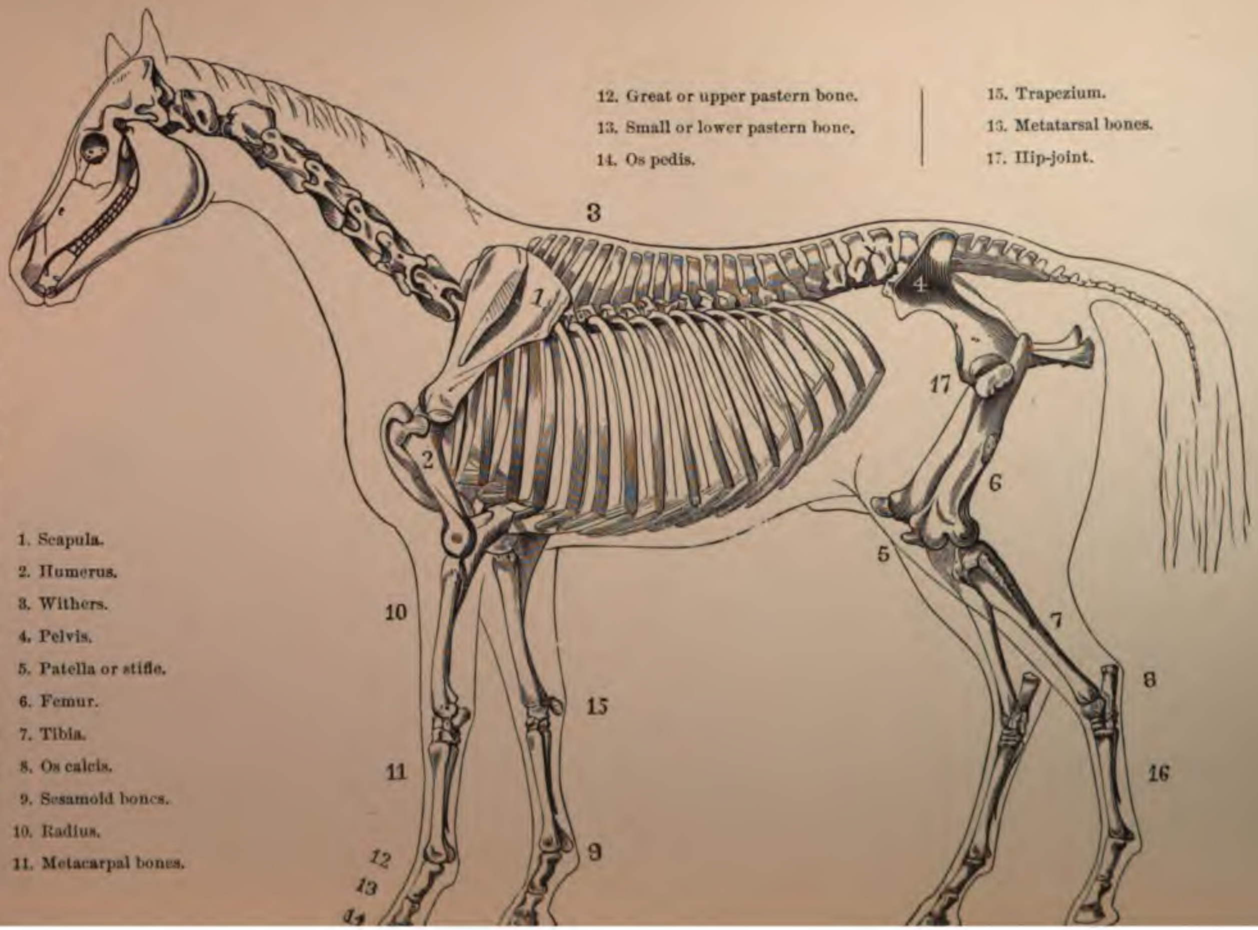
* This account of the *hunter*, originally written for Great Britain, is retained, although of little interest in this country, because it is necessary to a complete account of the most valuable domestic animal given to man.

PLATE I.

Skeleton of the Horse, as drawn by Professor Varnell.



1. Scapula.
2. Humerus.
3. Withers.
4. Pelvis.
5. Patella or stifle.
6. Femur.
7. Tibia.
8. Os calcis.
9. Sesamoid bones.
10. Radius.
11. Metacarpal bones.
12. Great or upper pastern bone.
13. Small or lower pastern bone.
14. Os pedis.
15. Trapezium.
16. Metatarsal bones.
17. Hip-joint.

muscular and firm; disposition manageable; the temper and mettle spirited, but equable, and free from restiveness or caprice.

19. Of the Training of the Hunter and Racer.—For *ordinary* purposes, horses require no further training than to be gradually accustomed to the duties to which they are devoted; but this method of accustoming the horse to his work (or "Breaking-in," *which see*), does not render peculiar treatment necessary, other than the mere physical tutoring, which may vary according to circumstances; whereas, for *extraordinary* purposes, under which heads we may fairly include hunting and racing, the horse requires to be submitted to a careful preparatory regimen, to insure the utmost development of his capabilities. This regimen should consist mainly in daily exercise, both of pace and endurance, extended by slow degrees; in the apportionment of sound dry food, such as will be hereafter mentioned in detail, under the head of "Feeding;" in the observance of regular hours, and in careful attention to the stable rules, hereafter enumerated under the head of "General Management." Whilst, at the same time, as regards young colts, which are on the point of being trained for the race-course, it may be desirable to promote the development of their physical powers, by occasional constitutional treatment.* Or, on the other hand, with respect to hunters, previous to the season, it may be desirable to watch every particular connected with the pulsation, respiration, and digestion of the animal, and to provide against any irregularities by treatment consistent with, and appropriate to, the symptoms. If, however, the regulations respecting the stable, the food, the grooming, and the exercise be punctually observed throughout the year (or the horse be turned out during the best part of the summer, but not after the nights become chilly and the ground permanently damp), there will not often be much necessity for having recourse to medicine.

20. Precaution to be Observed in Using the Hunter.—No hunter should be used more than three times a week, and rarely more than twice, especially when there has been a severe run; nor should he be allowed to remain without proper exercise in the intervals. We should also watch the state of the appetite, &c., after *very* severe work, in order body deep, round, and ample; the shoulders massive, and almost perpendicular; the loins raised and expansive; the hoofs ample and round, with moderate cavity, and plenty of space at the heels. But, in reality, it is difficult to say what horses should and what should not be appropriated to heavy draught work, as so much depends upon the convenience of proprietors. It is clear, however, that there is heavy work, which horses of a *particular calibre*, only, are capable of effectively performing, or, at all events, of performing continually; because the question of power often resolves itself into a simple question of physical *weight* and *power*, apart from *conformation*, and *conformation* adds materially to the effectiveness of both.

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* For this purpose, give *Calcarea carb.*, followed by *Silicea*, as follows: Of the first, twelve globules to the pint of water, administered in half pints night and morning for ten days, then a pause of three weeks; after which resume the same remedy, in like proportions, night and morning, every third day, for ten days; then pause a month, and resume treatment with a similar course of *Silicea*.

25. Of the Breeding of Horses—The Parentage and Brood-Mare —The Foaling—The Rearing and Breaking-in.—*The Parentage and Brood-Mare:* Without entering into a dissertation on the various races of horses, or on the question as to what particular admixtures of blood are supposed to be productive of the finest or ablest offspring, which are matters irrelevant of the purpose of this work, and which have been elaborately treated of by various eminent writers on the subject, we will content ourselves with recapitulating *those general rules* which apply *equally to all races of horses*, and which are essential to the production of handsome as well as capable colts. Great pains should be taken to avoid physical and constitutional defects in the selection of the stallion, as well as of the mare, and it would always be preferable to seek for the one or the other from a different stock, rather than to be continually breeding from amongst the same *family*. This does not imply the choice of a mare and stallion of a different *breed* or *race*, as this is part of the question into which we do not propose to enter. It must be borne in mind, that not only are defects of conformation, temper, or constitution hereditarily transmitted from the parents to the offspring, but, what is worse still, these defects are apt to be aggravated by inheritance. Thus, in order to insure a thoroughly good stock amongst the forthcoming foals, we must first of all be assured of the soundness and perfection of both the mare and stallion. Furthermore, not only are the natural or hereditary defects in the parentage thus transmissible to the offspring, but also defects arising out of the particular circumstances, habits, treatment, &c., of the mare or stallion. Consequently, nothing can be a greater mistake than the prevalent custom of *setting aside a mare for purposes of breeding, on account of being disabled, or of blemishes, imperfections, &c., the result of harsh or reckless treatment, which have rendered her useless for working.* The brood-mare, as well as the stallion, should be in the best condition as regards all capabilities of action, exertion, and the like.

Another important point in breeding horses is, as much as possible, to choose the brood-mare and stallion of a construction and development conformable to the purpose to which it is designed to appropriate the offspring. The more perfectly adapted is this general structure in the parents, as hereinbefore described under the head of "Rules for the Selection of Horses for various purposes," to the particular employment to which it is designed to devoté the offspring, the more efficient and perfect will be the foal. Again, it is desirable not to put a mare, calculated by construction for one purpose, to a stallion of a different mould, inasmuch as the foal would probably inherit the qualities, and even the conformation, of both parents, and thus the result of an ill assortment of such a nature would be, to produce a colt adapted to neither purpose.

Mares are fully capable of breeding, without prejudice, in their fourth year; and some of them, with careful management, and if constantly employed at light work, which conduces to promote general health, but cannot be productive of exhaustion or injury, will continue to breed well from ten to fifteen years. The plan adopted by some breeders of cattle, either from ignorance or false economy, of putting the mare to horse in the early part of the third year, is as erroneous as it is injurious. The structural development of the mare, apart from constitutional vigor (both of which are necessary for breeding), is hardly advanced to the completion, not to say strength of maturity.

The duration of pregnancy in mares ranges from ten to twelve months, and sometimes a week or two more or less; but the average may fairly be stated at the mean duration between the maximum and minimùm. And, although a mare is always in heat at one season (the beginning of the spring), the breeder will be able to put her to horse a few weeks earlier or later, according to the period at which it is desirable that *parturition* should take place.

For a racer, the earlier the better; for, although the month of January is not a propitious season either for the mare or foal, yet the racer is so much more artificially reared, that the external circumstances are of less consequence than the addition of three fair months of growth to the *two* and *three year old.*

For horses designed for other purposes, the later the better, because the *mare* and *foal* will not only have the advantages of weather, warmth, and so on, but also of abundance of fresh fodder, which is of no small consequence. It is, therefore, desirable to dispose matters so that parturition may probably take place between the middle of April and the middle of May.

Gentle work is advantageous to a mare in foal, and rather tends to beneficial results to the foal than otherwise; but care should be taken not to put her to any work which can produce a strain; and, with these precautions, she can continue to be employed, in ordinary labor, until within forty-eight, or even twenty-four hours of delivery. About the fifth month from the time of covering, it is always advisable to improve the quality of the food, and to adopt additional precautions lest abortion take place; and if this has previously occurred (once or repeatedly), there will be reason to keep the mare quite apart. A gallon of good white oats (in two feeds) every day will not be too much. When the time at which she is expected to foal approaches, it will be advantageous to keep a watchful eye upon her for the earliest symptoms of approaching parturition, that she may immediately be taken from work, and kept close at hand.

26. The Foaling.—The approach of the time of foaling will be presently descried by any person of common experience; and no one who does not possess these ordinary qualifications should be suffered to attend upon a mare at such a time. The mare should be closely watched from the moment of the first indications of approaching parturition, and should be turned into a well-fenced inclosure, thoroughly sheltered on all sides, and of a warm aspect. Within the inclosure, also, there should be a shed, with ample litter, easy of access. Light and air are important. If there be abundance of good grass on the spot, it will be needless to supply cut green fodder; but if the grass be scanty on the spot, and there be means of procuring it elsewhere, it should be supplied. In addition to this, the mare should be supplied with good sound carrots, good hay, sainfoin, clover, &c., and a plentiful share of sound white oats; as nothing is so materially conducive to the well-doing of the mare and foal as generous and wholesome food. It is also advantageous to bruise the grain, and to place it on the ground in some vessel, so that the foal may have free access to it as well as the dam. For a full month after parturition, the mare and foal will remain unmolested in their inclosure, and attended only by the person who has the care of them and feeds them. And here it may not be improper or superfluous to state, that the person so attending upon them should be of a patient and even temper, and of a kindly disposition, as nothing is so likely to impair the temper of the foal, and to induce the various vices which are classed generally under the head of restiveness, as harshness or capricious treatment at first. On the other hand, careful, gentle treatment, and *punctual attention*, are calculated to render the colt patient, quiet, and tractable.

27. **The Rearing, Weaning, &c.**—If the mare be used in farm work, she will, under all ordinary circumstances, be fit to resume gentle labor, for brief periods, within five or six weeks after parturition; but at that early period she will not be accompanied by the foal, and therefore she should not be kept at work long at a time, both on her own account and that of the foal; and during her absence it will be advisable to confine the foal within the shed, and not to let it have the range of the inclosure. But, after the lapse of two months from the time of parturition, the foal will be strong enough to accompany the dam, and then she may be worked for longer periods. The food should constantly be generous and wholesome. In many cases the foal may safely be taken from the dam at five months old, and should never be allowed to remain with her more than six months. It is desirable that the colt, thus separated from the mother, should have companions, which should also be young; but it is necessary to have a care that it is not harassed or ill treated by its companions, as sometimes happens; and it is always preferable to afford the colt the run of a straw-yard, where good shelter, ample litter, sheds, and means of seeking refuge from the weather, are at hand. It should also be separated from its companions to be fed, at all events for some time, until it is able to cater for itself; and it should be supplied with two feeds of good bruised oats every day.

28. **Breaking-in.**—The breaking-in for agricultural purposes consists chiefly in accustoming the young horse to his equipments, and in applying him, by slow degrees, to his work with other horses. This process of breaking should not commence until the young horse is fairly in his *third* year, when he may, by degrees, be put under the restraint of the head-piece bit, and subsequently of the entire harness, until he grows accustomed to wear them; *but no harshness or ill humor should be betrayed towards him, and, above all, chastisement should never be resorted to with him,* if for no other reason, because he will not understand it. With a little patience, almost any colt may be coaxed into the habits which are required of him. Put to work with other horses, he will have no resource but to move as they move; and the driver should be ever at his side to guide and caress him. Gradually accustomed to the voice of his driver, he may be trained to turn, stop, proceed, or back, by means of gentle guidance. In respect of *training for*

the race-course, as this is beyond our province, we need only remark, that this must necessarily be conducted by persons who devote their whole time to such purposes. Suffice it to say, however, that where a young horse is designed for early engagements, the course of training must needs commence considerably before the period named above in respect of *agricultural* horses. In respect of *carriage horses*, *saddle horses generally*, and *hunters*, the *breaking-in*, to be efficiently done, must be conducted by persons of experience, and fully competent in these matters, as no brief directions would render much assistance to the unpracticed reader, and therefore we shall abstain from entering into detail on the subject. Suffice it to say, however, that the breaking-in for these purposes should not commence before the young horse has fairly entered upon, or postponed after he has completed, his *third* year. At an earlier age, it will do mischief; later, he will never be efficiently broken-in. Moreover, every owner of a horse should select a breaker-in whom he can trust to conduct the training with *gentleness;* and it were always desirable to keep an eye upon the method and treatment adopted by the person so employed, lest the least harshness be used. The person to whom the young horse has been accustomed, and by whom he is constantly fed, should, if possible, be at hand during the lessons.

29. The Teeth of the Horse as an Index of Age.—The perfect set of teeth of an adult horse numbers 40, which are thus arranged:

Cutting teeth, incisors, or *nippers*—6 above and 6 below, ...	12
Tusks, or canine teeth—1 on *each* side above (2), and the like below (2),	4
Grinders, or molar teeth—6 on each side above (12), and the like below (12), ...	24
Total, ...	40

But, previous to the gradual appearance of the teeth which constitute this set, and which are called the *permanent teeth*, the colt is provided with another set, which is more conformable to the exigencies of the young animal, and which we may call the *temporary teeth*. These are popularly called *milk teeth*.

At the completion of the first year, the temporary teeth have all appeared, constituting the total number present, according to some authors, in which case the yearling colt possesses *only* his complete set of milk teeth, numbering 24,* thus:

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* This classification is erroneous, not as to the numbers of *temporary teeth*, but because the yearling colt or filly possesses, in general, the four *first permanent grinders*, the *fourth*, *fifth*, and *sixth* not being changed at all

The *number simultaneously present:*

From *one to two years old*, as before stated (*vide antea*).

At *three years old*, as follows:	M. T.	P. T.
Cutting teeth, incisors, or nippers—*milk teeth*, two on each side above (4), and the like below (4),	8	0
Cutting teeth, incisors, or nippers—*permanent teeth*, two central above, and two likewise below,	0	4
Grinders, or molar teeth—*milk teeth, full grown*, two above on each side (4), and the like below (4), *i. e.*, the second and third,*	8	0
Grinders, or molar teeth—*permanent teeth, full grown*, three on each side above (6), and the like below (6), *i. e.*, the first, fourth, and fifth,*	0	12
Grinders, or molar teeth—*permanent teeth, in progress*, one on each side above (2), and the like below (2), *i. e.*, the sixth,*	0	4
Totals,	16	20 = 36

The cutting teeth, incisors, or *nippers*, as they are more technically termed, are developed as follows. In the course of a week, or from that to a fortnight after birth, the two front nippers appear above and below (making four), and within the second month we have the addition of four more, namely, one on each side of the first two, above and below. *The first four having attained their full growth in about ten weeks, and the four new teeth being of course smaller.* The construction of these teeth is the chief index of age; because as they attain full growth, they *begin to wear*, and in the degree of wear from the obliteration of the original shape, and of the hollow indentation or cavity which stretches along the upper surface, and which constitutes the *mark or index*, we observe the progress of time.

The incisors, in their original shape, are keen and more elevated at the outer edge, and incline inwards, rounded in front, and rather inclined to concave shape on the inner side. As soon as these teeth have protruded through the gums they begin to wear away, so that the first which appear soonest betray indications of wear—in the gradual *depression of the outer edge*, the loss of sharpness, and the modification of the *indentation or mark*, by the wearing away of the surrounding edges, until the upper surface or crown becomes nearly level, and the

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* The fourth and fifth, although *first* teeth, cannot be termed *temporary teeth*, because they do not change; the same remark applies to the sixth. It must not, however, be forgotten, that they are the *first* (as well as the *only*) teeth which occupy their respective places.

new teeth, will constitute a distinctive feature of the jaws of a young horse between three and four years old.

Upon the completion of the *fourth* year the young horse acquires four additional teeth; namely, the *tusks* or *canine teeth.* At least at four years old they begin to show themselves; whereas at the same time the last of the *temporary grinding* teeth has attained its full growth; the two central cutting teeth above and below will be fully grown, and begin to show signs of being worn; whilst the adjacent new teeth will be almost level with them in elevation, but very distinctly indented and keen.

During the progress of, and sometimes early in the *fifth* year, the last four *temporary cutting teeth* (*i. e.,* one on each side above and below) will be supplanted by incipient permanent teeth; whilst the *tusks* will have become developed and have attained a considerable size.

The tusk is then convex without and slightly concave within; it is, as it were, fluted on each side of the exterior convexity.

At the completion of the fifth year we shall notice the vacancy occasioned in the place of the *third* (and last *changing*) molar tooth by the shedding of the temporary tooth, and the inadequate elevation of its substitute; whereas the sixth and last of the grinders is fully grown and level with the others, whilst we may remark that the *last* of the *permanent cutting teeth* have also attained full growth, and that the fluting on either side of the external convexity of the *tusks* has become almost entirely obliterated. The *mark* is very distinct, and displays a *double arched line* in the last incisors. At the completion of the *sixth* year, the distinctive features consist in the full growth of the canine teeth, which vary in a full-sized horse from three-quarters to one inch in elevation, being pointed keen at the edges, and still the same as respects the other particulars, whilst the *last new* (3d) molar tooth is fully grown and level with the others. The *mark* as respects the four central incisors is obliterated, being converted rather into an *even brownish tint* than as before, a furrow. Upon very minute inspection, however, we should still remark a slight *sinking* in the centre. As respects the next adjacent incisors the mark is much modified, and even the *last new nippers* begin to betray indications of being considerably worn. At the completion of the *seventh* year the tusks begin to grow convex on the inner side, and have already become far more obtuse both at the apex and along the edges; and the *last incisors* only, on either hand, retain the least *distinctive* trace of the mark which is equally obliterated in the four others. And the completion of the *eighth* year, which finally precludes all further traces of age in the horse, may be distinguished by the *complete interior* convexity of the *tusks*, and the thorough obliteration of the *mark* even on the surface of the *last cutting teeth*.

30. Age, as Indicated by the Teeth.—The very great practical interest which belongs to this subject leads us to take from a recent English book* the following additional account of the growth of the teeth, with the cuts which will enable any one to make himself master of the subject with a little careful study:

Introduction.—The principal guide to the age of the horse consists in the indications given by the teeth.

We shall proceed to explain the changes which take place, more with the view of enabling the reader to form a correct judgment in regard to age, than of giving a general dissertation on the nature and structure of the teeth.

31. Structural Alterations in the Teeth.—Structural alterations take place in the teeth every year from birth up to the sixth year. Hence there can rarely be any question as to real age of a horse up to that date, though dealers often try to deceive the unwary by various tricks. Such tricks are however easily detected.

After the mouth is fully completed, the age can only be *approximately* determined by the effect of wear in altering the shape of the teeth, by the receding of the gums, and by other such signs.

Many circumstances, however, often contribute to modify the effect of wear on the teeth, and also to increase or decrease the action of time in other respects. Hence, after six years old, a correct opinion can only be formed by those who have given to the subject some time, thought, and trouble.

32. Of the Back Teeth, otherwise called Molars or Grinders.—The foal is born usually with two, sometimes with three, temporary molars in each jaw. About twelve months old another molar, a permanent tooth, appears, and before the completion of the second year a fifth molar, also a permanent tooth, shows itself.

About two and a half years old the two anterior temporary molars are replaced by permanent teeth, and between three and four the remaining, or third, temporary molar is similarly replaced; and about the same time the last or sixth permanent molar begins to appear.

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* "Horses and Stables." By Colonel F. Fitzwygram. London, 1869.

Thus when the mouth is completed, there are six permanent molars in each jaw, or twenty-four in all.

These structural changes afford a very good index of the age of the horse up to the period when they are completed, namely, four years old. The molars, however, are seldom referred to, because their position at the back of the mouth renders their examination inconvenient and often very difficult. Nevertheless, it is useful to be acquainted with the structural changes of these teeth in cases where there may be a doubt as to the true age, as indicated by the incisors. After four years old, the molars are not often taken into consideration in determining the age of the horse.

We may mention in passing, that a supplementary molar, known as a "Wolf's tooth," sometimes appears in either jaw. Such teeth seldom cause any inconvenience. If they do so, they can easily be removed by the pincers, as they are only of a rudimentary character.

33. Of the Anterior Teeth or Incisors.—The anterior teeth, or incisors, are six in number in each jaw, when the mouth is complete; and in the immediate rear of these in males, there is usually added one very peculiar pointed tooth on each side in each jaw, called a tusk. Though there are two crops of incisors, yet there is but one of tusks. In fact, these teeth, though they begin to appear about four years old, are not usually fully developed until the last permanent incisor is more or less up.

For the sake of brevity we shall confine our remarks to the lower jaw, as the structural changes which take place in the upper are nearly similar. In passing, however, we may remark, that the upper incisors are considerably longer and larger than the lower.

34. Distinction between Temporary and Permanent Incisors.—Temporary, otherwise called Milk, are easily distinguished from Permanent incisors by the following well-marked signs, namely, they are smaller, whiter, and have more distinct necks. They are smooth externally, and grooved on the inside,—probably in order to enable the foal more easily to grip the teats of the dam. Their fangs are small and have but little attachment to the gums. The jaws are plump, fleshy, and round, and the teeth are arranged in something like a semicircle.

Permanent teeth, on the other hand, are larger, broader, wider in their necks, grooved externally and smooth internally, and more discolored than milk teeth. The discoloration is due to the lodgment of the juices and other matters connected with the food in the grooves. The object of the external grooving probably is to enable the animal to get a better grip on grass and such like food. The plumpness and circularity of the jaw is less than in the younger animal, and it gradually decreases, until in old age the teeth are arranged in a nearly straight line.

35. Of the Temporary or Milk Incisors.—The foal is born with his teeth in a rudimentary state in the gums. At various periods during the first ten months the different temporary incisors appear. (Fig. 0.) Under one year old the foal is also clearly distinguished by a woolly tail.

The yearling is complete in all six incisors, but several well-marked signs distinguish his mouth from that of the two-year old. The teeth at this period show but little signs of wear. The corner teeth are mere shells, having no inner walls, and all the teeth are in close juxtaposition. (Fig. 1.)

At two years old, the inner wall of the corner teeth has grown up level with the outer wall. The centre teeth show considerable signs of wear, and indeed all the teeth appear somewhat smaller than they did in the yearling. They also stand somewhat wide apart at their necks on account of the gradual growth of the jaw in width. (Fig. 2.)

36. Development of the Permanent Teeth.—A few months before three years old, the horse sheds the two centre milk teeth, which are replaced by permanent. Thus the jaw contains at three years old two centre permanent teeth and two milk teeth on each side. (Fig. 3.)

A few months before four, the horse sheds the two next milk teeth, which are replaced by permanent. Thus the jaw now contains four permanent and one milk tooth on each side. (Fig. 4.) The appearance of the mouth, when closed, and also the mode in which the teeth meet, are shown in Fig. 4*a*. This figure will be presently contrasted with Fig. 27, which shows the mode in which the mouth closes and the teeth meet in extreme old age.

A few months before five, the horse sheds the two remaining milk teeth, which are replaced by permanent. Thus the jaw is now furnished with six permanent incisors, but the corner teeth are mere shells, having no internal wall. The absence of this wall distinguishes the five from the six-year old mouth. (Fig. 5.)

A few months before six, the inner wall of the corner teeth has grown up level with the outer wall. (Fig. 6.)

The mouth is now fully complete in incisors, and no further structural changes take place in them. As a general rule, we may add that the upper temporary teeth fall out a little before those in the lower jaw.

Up to six years old, therefore, inasmuch as we have structural changes to guide us, there can seldom be any doubt as to the age of the animal. There are, however, some well-authenticated instances of abnormal development of the permanent incisors, but they are rare.

Thorough-bred horses date their age from the 1st of January, whilst other horses are reckoned from the 1st of May. Thorough-bred mares are covered, so as to throw their foals as soon as possible after the 1st of January; whilst in regard to other mares the owner does not wish to have their progeny born, before the spring grass is available for the sustenance of the dam and her foal.

High feeding encourages the growth of the teeth in common with the rest of the frame. Hence thorough-breds (independently of their earlier date of foaling) are somewhat more forward in their mouths than half-bred animals.

It is a common practice among dealers to pull out the milk teeth next about to fall out. Nature however does not supply the permanent tooth much before its proper time. The absence of a milk tooth, when its place has not been supplied by a permanent tooth, need not mislead any one.

37. Of the Mark.—Hitherto we have taken no notice of the "Mark" or Infundibulum. We have abstained from doing so, not because the marks in the young mouth do not afford some indication of the age, but because fuller and more satisfactory evidence up to six years old is afforded by the structural changes detailed above. After six, however, we are compelled to have recourse to the indications given by the marks and other slight, but gradual, alterations which take place in the form of the teeth.

A satisfactory explanation of the mark cannot, we are afraid, be given without entering at some length into the structure and organization of the teeth. The Mark or Infundibulum is a very peculiar hollow extending, when the tooth first comes up, about half an inch down the temporary and rather deeper down the permanent incisors. (Fig. 18.)

Teeth practically may be said to consist of two materials, namely, enamel and dentine. Enamel, which is very hard, sharp, and originally of pearly whiteness, covers the outside of the teeth, and also lines the sides and bottom of the hollow or infundibulum. Thus in the tooth, as it originally appears, there are four walls of enamel. The remainder of the tooth consists chiefly of dentine, a substance of considerable, but less hardness than enamel, and more like ivory. A small quantity of crusta petrosa is also found on the outside.

When an incisor first comes up, the hollow affords lodgment for the débris of the food and the juices expressed from it, and therefore soon looks black. As the tooth wears down, the hollow of course disappears; but the surface of the dentine immediately below the original hollow, being a somewhat soft material, has become stained for some distance down. Thus there is still a black mark. With the further wear of the tooth the stained portion of the dentine wears away, and the "mark" is then said to be out. The mark, as the reader will easily see from this description, is in a constantly changing condition.

Premising that the time which the mark will take to wear out, will vary to a greater or less degree according to certain circumstances detailed hereafter, we shall now endeavor to give some general rules for guidance.

Between three and five years old the marks are very plain in the permanent incisors. (Figs. 3, 4, and 5.) At six, the marks are wearing out of the two centre teeth, which came up at three years old. They are plain in the two next, and perfectly fresh in the two corner teeth. (Fig. 6.)

At seven, the marks have disappeared from the centre teeth, are wearing out of the two next; and are distinct and plain only in the corner teeth. (Fig. 7.)

At eight, the marks have disappeared from all but the corner teeth, in which they are becoming indistinct. (Fig. 8.)

At nine, the marks are not usually found in any of the teeth. (Fig. 9.)

For about two years after the mark has disappeared in each tooth, there may still be seen in the form of a star a trace of the enamel which lined the bottom of the original hollow, and which underlies it for some depth. This star of course decreases in size with the wear of the teeth. About twelve or thirteen the last traces of the enamel have usually disappeared even from the corner teeth, but it may remain some time longer.

Many casual circumstances, however, cause a certain degree of deviation from these general rules. The time which the mark takes to wear out, will vary in different horses according to the hardness or otherwise of the teeth, and according to the nature of the food on which the animal is kept. In grass-fed horses the marks usually remain at least a year and sometimes two years longer than in those fed on hard

PLATE II.

Fig. 0.—*The Foal.*

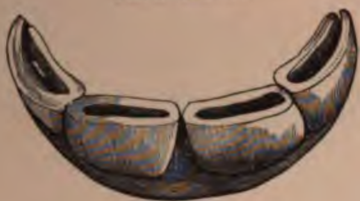


Fig. 1.—*Yearling.*

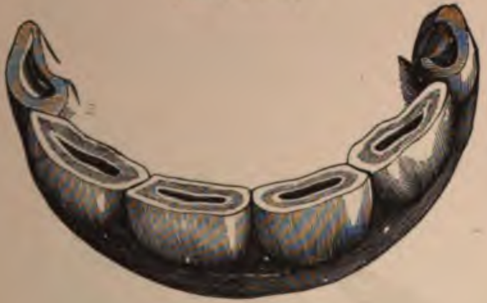


Fig. 2.—*Two years.*

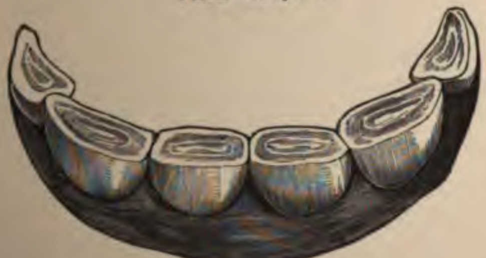


PLATE III.

Fig. 3.—*Three years.*

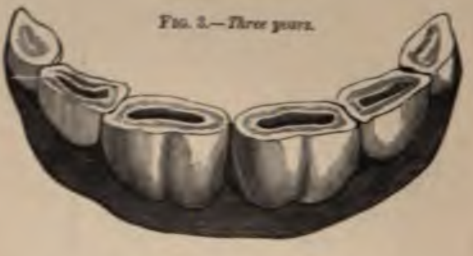


Fig. 4.—*Four years.*

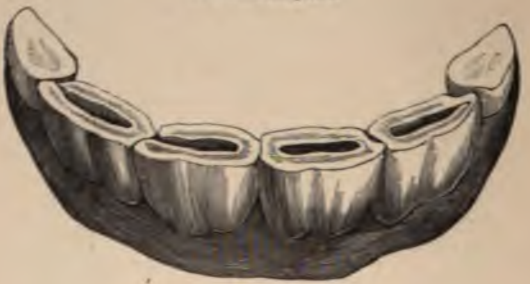


Fig. 4 *a.*—*Four years. Mouth closed.*

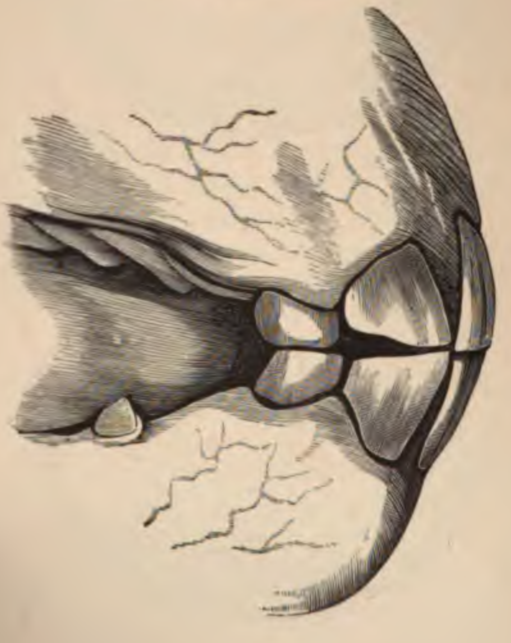


PLATE IV.

FIG. 5.—*Five years.*

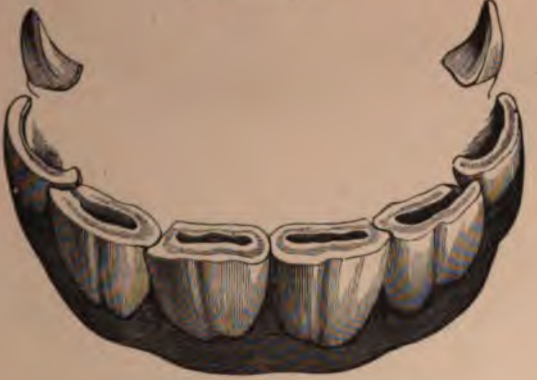


FIG. 6.—*Six years.*

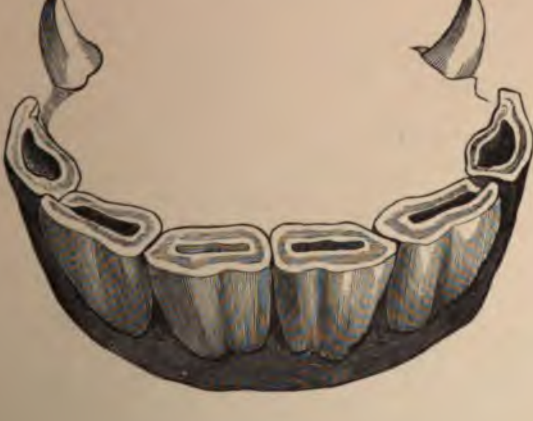


PLATE V.

FIG. 7.—*Seven years.*

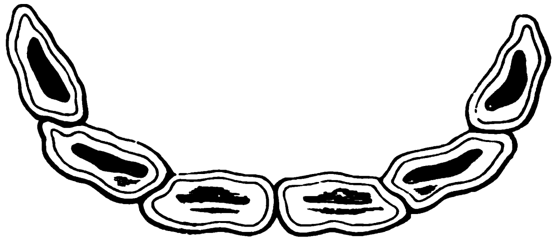


FIG. 7 *a.*—*Seven years.*

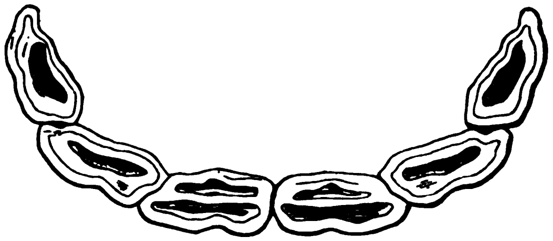


FIG. 8.—*Eight years.*

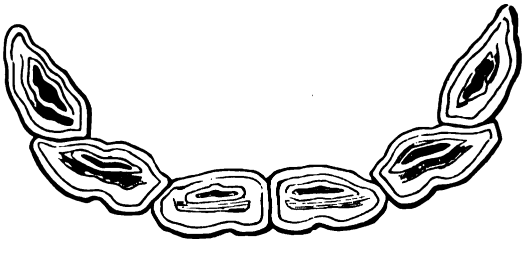


FIG. 9.—*Nine years.*

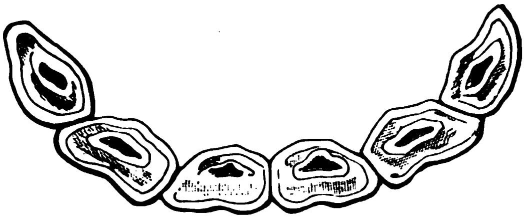


PLATE VI.

FIG. 10.—*Ten years.*

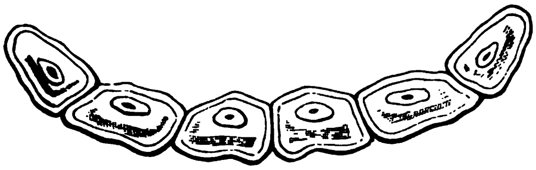


FIG. 11.—*Eleven years.*

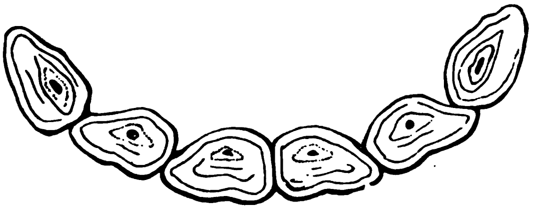


FIG. 12.—*Twelve years.*

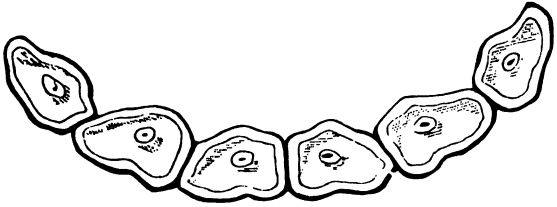


FIG. 13.—*Sixteen years.*

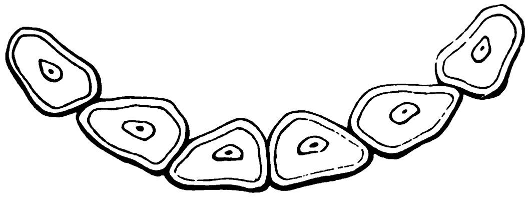


PLATE VII.

FIG. 14.—*Twenty years.*

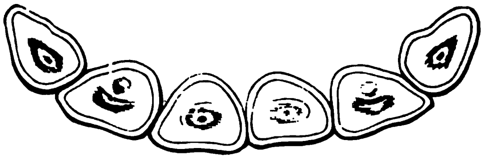


FIG. 15.—*Twenty-four years.*

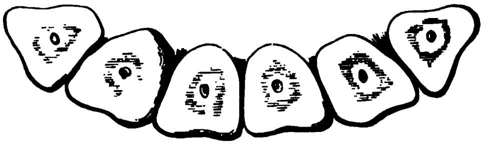


FIG. 16.—*Extreme age.*

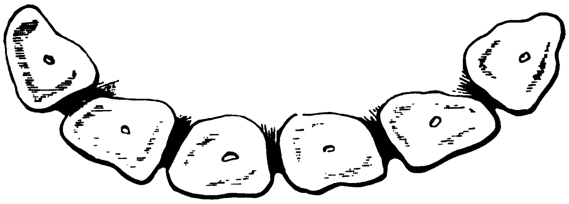


FIG. 17.—*Extreme age.*

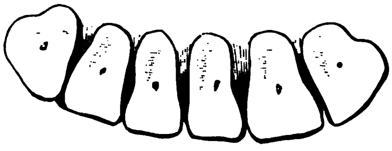


PLATE VIII.

SLOPE OF THE TEETH AT DIFFERENT AGES.

FIG. 22.—*Two years*

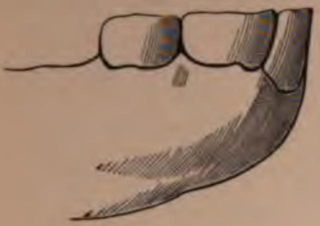


FIG. 23.—*Six years.*

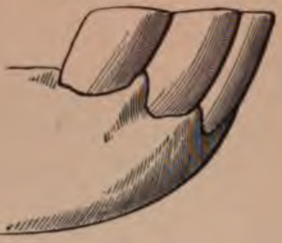


FIG. 24.—*Twelve years.*

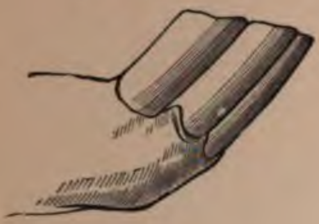


FIG. 25.—*Eighteen years.*

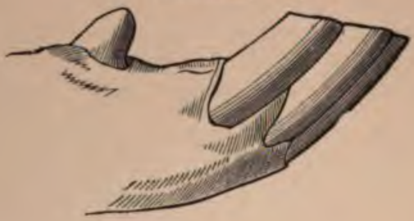


FIG. 26.—*Extreme Age.*

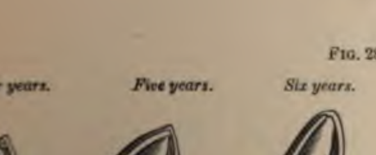


FIG. 27.—*Closing of mouth in Extreme Age.*

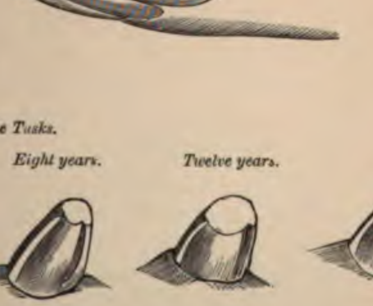
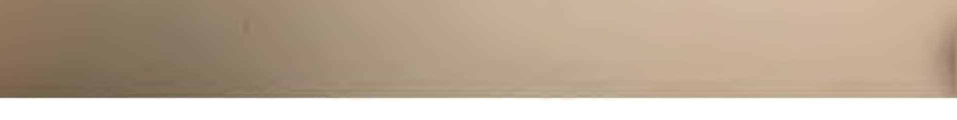


FIG. 28.—*The Tusks.*



Four years. *Five years.* *Six years.* *Eight years.* *Twelve years.* *Old.*

PLATE IX.

Fig. 18.—*Section of a Tooth.*
A.—*Infundibulum.* B.—*Fang Hole.*

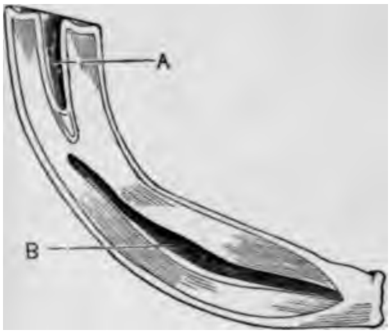


Fig. 19.—*Real and Simulated marks.*

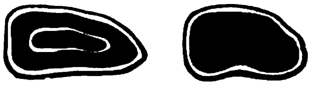


Fig. 29.—*Parrot Mouth.*

Fig. 20.—*Removal by the saw of successive portions of a tooth.*

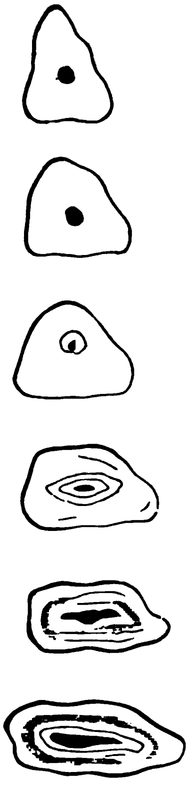
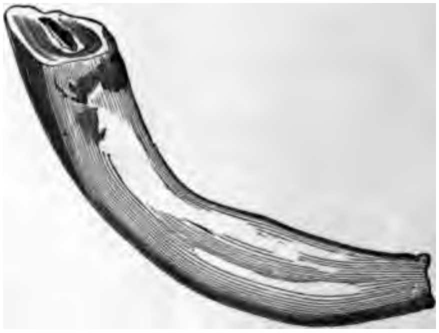


Fig. 21—*Original form of a Tooth.*



food. Again in parrot-mouthed horses, that is, where the upper overlaps the lower jaw, the marks may remain for many years. (Fig. 29.)

On the other hand, some horses, which have a trick of biting the manger, wear down their teeth very rapidly, and therefore lose their marks very early. Horses, fed on salt marshes where the sea sand is washed up among the grass, or on sandy plains or meadows, are affected by the increased friction on the teeth caused by the sand. Occasionally a projecting tooth in the upper jaw may cause unusual friction on the corresponding tooth of the lower jaw, and so may hasten obliteration of the mark.

Most of these and other causes of irregularity of wear, which might be mentioned, are at once apparent to a careful and accurate observer, and will scarcely prevent his forming a pretty correct opinion of the age.

The upper incisors, as previously stated, are considerably longer and larger than the lower, and the infundibulum is nearly twice as deep. The marks therefore remain longer than in the lower teeth. We mention this in passing, lest the reader should be misled, if he should by chance refer to the indications given by the upper teeth to corroborate or correct any opinion as to age, about which he may be in doubt from the appearance of the lower jaw.

Occasionally the dentine on the side of the infundibulum may become stained and even black, and in such cases something like a double mark may be observed. An instance of this peculiarity is shown in a seven-year old mouth (Fig. 7*a*), and in a slighter degree in Fig. 8.

The mouth taken as a whole is broader at seven years old than at any other period. After this it gradually narrows with age. In this respect, the drawings, taken as a consecutive series, are in some degree at fault, as the author found it impossible to get mouths of the required ages to form a perfect ideal series. For instance, the mouth represented in Fig. 16 (extreme age) obviously has belonged to a very different animal to that shown in the preceding figure. Again Figs. 16 and 17 are fair specimens, though very diverse, of what may be expected in extreme age in various cases.

38. Bishoping.—Marks on the incisors are occasionally simulated by means of caustic or the hot iron by low dealers with the view of deceiving the unwary.

The fraud is readily detected, because though it is easy to make a black mark on the crowns of the teeth, yet it is impossible to restore the wall of pearly enamel, which, as explained above, surrounds the natural mark or infundibulum. (Figs. 19 and 19*a*.)

39. The Fang-hole or Secondary Mark.—About nine years old, in consequence of the wearing down of the teeth, a slight trace of the fang-hole usually appears in the centre teeth, and somewhat later in the other teeth. It is indicated by a slight discoloration of the tooth at the above point. There is, however, no actual hole, because with advancing years the upper part of the original cavity has
up with a sort of spurious dentine, which is mo
material, of which the body of the tooth consi
this indication of the fang-hole, which is some
ondary mark," becomes rather more plain.
reliable data by which to judge of the age, an
this place, lest the reader should mistake it fo
fundibulum. The enamel, it will be rememb
whilst the mark of the fang-hole is brownish-ye
the fang-hole (marked B) is shown in Fig. 18.

40. Further Changes Indicating the Age.
about nine the "marks" entirely fail us, and
eight they can hardly be said to afford any very

From eight years old and upwards the best
are given by the gradual alterations which take
the teeth from wear and in the closing of the mo

Lateral Breadth, &c.—The teeth originally are
upper surfaces, otherwise called their crowns or "
front to rear. (Figs. 4, 5, and 6.) They narro
their necks and fangs. Hence, as their upper
teeth become narrower year by year. In very ol
a positive interval between the teeth (Figs. 16 an
like sticks in the jaw.

The gradual effect of wear in producing this a
Fig. 20, where successive portions of the upper su
represented as having been removed by the saw.
of the tooth is shown in Fig. 21.

The amount of wear on the upper surface of t
the young mouth than it is afterwards, because in
more fairly than they do in after years. (Comp and 27.) It gradually decreases, as years increase, because the teeth do not meet so directly, but on the contrary project more and more forward in

something like two parallel lines. For example, a quarter of an inch will usually be worn off the surface between five and six years old, whilst probably not more than that quantity will be worn off between twenty and twenty-five years old.

Triangularity.—A further very well-marked indication of increasing age is given by increasing depth from front to rear in the upper surfaces or crowns of the teeth. This increase of depth will be noticed if Figs. 7 and 8 are carefully compared with Figs. 4, 5, and 6. Further wear causes the crowns of the teeth to assume a triangular form. The cause of this will be clearly seen on reference to Fig. 20. The teeth, though they diminish in lateral breadth, increase in thickness from front to rear all the way from the crown to the fang. (Figs. 20 and 21.)

At six and up to eight years old, the teeth are all broad laterally at their upper surfaces. (Figs. 6, 7, and 8.) Up to this time the exact year, as the reader will recollect, is pretty well known by the "marks."

At nine, when the marks fail, the alterations in the crown surface or table come to our aid. The two centre teeth, which came up at three, become somewhat triangular. (Fig. 9.) At ten, the two next teeth show similar signs. (Fig. 10.) At eleven, the corner teeth have become somewhat triangular. (Fig. 11.) At twelve, the triangularity has increased in all the teeth. (Fig. 12.) This alteration continues to increase in all the teeth, until in very old horses the depth from front to rear exceeds the lateral width of the teeth. Fig. 13 shows an average mouth of sixteen years old. Fig. 14 represents the appearance at twenty. Fig. 15 shows twenty-four; whilst Figs. 16 and 17 may serve as specimens of the teeth in extreme age.

Length.—Again, as age increases, the teeth, notwithstanding they really wear down, become apparently longer. This effect is due to the fleshy parts of the gums receding faster than the teeth wear down. In extreme age, however, when the gums have receded as far as they can, the effect of wear causes the teeth to become *visibly* as well as *really* shorter.

Slope.—An alteration also takes place in the position or "slope" of the teeth, as regards their closing. This is due to the effect of wear. The original form of the tooth is shown in Fig. 21. Its upper portion, it will be seen, is nearly perpendicular, whilst the lower part lies in a more horizontal position. Hence in youth the teeth meet directly, whilst in extreme age they can scarcely be said to meet at all. Then stumps project forward in two almost parallel lines. (Figs. 26 and 27.)

The various changes which take place in the position of the teeth in reference t their position or "slope" are shown in Figs. 22 to 27. At two years old (Fig. 22) the gums are full, fleshy, and prominent, and the teeth are nearly perpendicular. The gradual changes which take place in the slope with increasing years, are shown perhaps more clearly in the plates than could be explained in words.

Up to twelve years old, there can scarcely be much difficulty in forming a pretty correct judgment as to the age. After that time it requires more time, practice, and opportunity than most people have at disposal to obtain the requisite knowledge.

It would probably scarcely interest the non-professional reader to trace very minutely the changes which take place after twelve years old. Suffice it to say, that the gums continue year by year to recede, the teeth become *apparently* longer and longer and *really* narrower, and consequently the intervals between them increase, and they project forward more and more in a straight line.

About twenty-four and in some instances a good deal sooner, the teeth, which up to this period have *apparently* increased in length, begin to grow *visibly* shorter, because the gums are so far absorbed, that they can recede no further. Hence all further wear shows its effects by diminishing the length of the teeth.

Loss of Circularity.—In the very young horse the teeth are arranged almost in the form of a semicircle. Year by year this form decreases, until in old horses the teeth are arranged in something like a straight line. Compare Figs. 0, 1, 2, 3, and 4, with Figs. 14, 15, 16, and 17.

If the reader should happen to be in the neighborhood of a cavalry barrack, he will have the best possible opportunity of studying the age of living horses, because in every regiment an accurate register is kept of the age of every horse.

Memorandum.—The drawings of the teeth have all been made from nature; and hence, although pretty normal specimens have been selected, yet in various ways they present in some instances irregularities and deviations from a positively regular rule of wear. Perfect regularity in wear and in the effect of wear is seldom found in nature. In some instances it will be observed, that the enamel is higher and more prominent than in others. This difference does not indicate or in any degree depend on age, but simply on the comparative hardness or softness of the enamel and dentine.

41. The Tusks.—In horses, as distinguished from mares, great assistance in determining the age is derived from the presence of the tusks, which are generally wanting in the latter. The tusks usually begin to appear in a very slight degree about three and a half or four years old. Their sharp points then just pierce the gums, and they continue to grow until fully developed about five or five and a half years old. They do not meet like other teeth, and therefore do not suffer from wear from that cause. They suffer, however, from wear in the course of mastication, and in fact undergo greater changes than any other teeth, and so form a valuable guide as to age.

The tusk is a very peculiar-shaped elongated tooth. Internally it consists of dentine, and is protected on the outside only by enamel. The enamel, however, overlaps the dentine, and hence arises the sharp edge or hook of the newly developed tusk, which may be felt if the finger be brought round it from behind.

This sharpness gradually wears off. After seven it has disappeared, and in each succeeding year the tusk becomes not only rounder and blunter, but its upper portion wears off. It also appears yellow, on account of the dentine becoming exposed by reason of the enamel wearing off its exterior surface. The tusks, unlike other teeth, do not apparently increase in length with years, but become shorter and shorter. In fact the effect of wear is greater on them than on other teeth, and it is also greater than the process of the receding of the gum. In very old horses the tusk is very little above the level of the gum. Mares sometimes have four small rudimentary tusks.

The alterations which gradually take place in the form of the tusks, are shown in a series in Fig. 28.

42. Collateral Circumstances to be taken into Consideration.— In judging of the age of the horse by the teeth, every collateral circumstance requires to be taken into consideration, such as the form of the mouth, the way in which the teeth meet and close on each other, the food on which the animal has been kept, any irregularity in the upper teeth which may cause increased or diminished wear on the lower teeth, and also the habits of the horse in the stable. The teeth of animals which bite at the rack or manger whilst being cleaned, invariably present appearances of wear beyond their real age.

The body also presents many indications of the age which may assist us in forming an accurate opinion, and sometimes may enable us to correct an erroneous impression produced by some abnormal appearance of the teeth. The young horse is fleshy about the gums and head, and the hollow over the eye is shallow. Year by year, as age increases, the gums lose their fleshiness, the head becomes more lean, and the hollow over the eye deepens. The shoulders lose much of their thickness and become finer, and assume an appearance of greater length. The hind quarters in like manner lose some of their roundness, and the animal generally gains an appearance of more breeding than he had in his younger days. The back becomes more or less hollow, a result partly due to the effect of weight especially in long-backed animals, and partly to loss of fleshiness in the muscles which run along the spine.

Again, as the horse becomes old, the fulness of the chin under the mouth disappears. The inferior margin of the branches of the bone of the lower jaw also become thin. Lastly, the general appearance of the aged horse is much influenced by the work he has done and the treatment he has received.

Age must not be judged by any one sign, but by a mean judiciously struck between all the signs, and by a careful consideration of all collateral circumstances. It never happens that all the signs combine together to deceive a careful and well-informed observer.

From these pages the reader will perceive that after six years old, *i. e.*, after the structural changes in the mouth are completed, it is impossible to lay down any one single definite rule by which the age can be ascertained. Still, with a little trouble and attention there is no real difficulty in acquiring a knowledge of the horse's age up to a comparatively late period of his life.

Such a knowledge is always valuable to an intending purchaser. Horses of eight or nine years old are still in the prime; but from want of knowledge of the means of ascertaining the real age and from very natural distrust of what the owner may tell them, the public are very shy of buying such horses; and consequently they may generally be obtained at prices far below their real value.

The author is well aware of the popular feeling in favor of young horses; but in his own opinion a moderately fresh aged horse is generally a much more useful, presently available, and therefore more really valuable animal, than a young untried horse with all troubles, ailments, diseases, and liability to disease before him.

43. Of the Accessory Treatment and General Management of the Horse: comprising Hints respecting the Stable, Litter, Air, Light, Exercise, Food, Drink, Shoeing, &c.—The construction of stables would seem to have been often conducted by persons wholly ignorant of the necessities of the horse, judging from the imperfections which they frequently betray. Economy of space, such as that which characterizes your miniature grandeur in a suburban villa, in which the builder contrives to introduce all the elaborate apparatus of a palace within the compass of a nutshell, is perfectly inconsistent with the necessities of the horse. Where a horse must necessarily be maintained in the stable for lack of other retreats, such as the straw-yard or paddock, he cannot have too much breathing-room (within reasonable bounds). And this necessity is increased by the presence of two or more horses in one stable. Loose boxes are preferable to stalls where there is room for them; but where the stable is stalled off, a clear seven feet in breadth should be allowed for each stall, and a depth (or projection from the manger) of nine or ten feet. A further space of six feet should be added to the width of the stable for the clear passage, &c. The pavement, constructed most advantageously of sound bricks placed edgeways, and very even, should be gently inclined upwards from the ends of the stall-boards to the manger, in the ratio of one in twenty; *i. e.*, six inches in the ten feet, to admit of thorough drainage. The passage along the other side of the stable should similarly be inclined upwards towards the wall, so that a kind of gully will extend along the entire length of the stable, at the foot of the stalls. Underneath this gully (which should only be inclined between and towards the traps or gully-holes) should run the drain at an inclination of at least one in ten. The simplest method is to allow the drain its greatest elevation (*i. e.*, to be nearest to the surface) at each end, descending both ways to the centre, whence a branch of considerable depth will convey the drainage away.* At the centre of the foot of each stall, or preferably sometimes at the foot of each stall-board, should be a small gully-hole† communicating with the drain, towards each of which, as above stated, the channel or gully should be inclined from the centre between them. Thus, with a little attention, and the assistance of a little pure water and a stiff broom, the stable may be kept thoroughly clean. In hot weather it will be desirable to prevent the emanation of foul smells from the drain by cleansing it from time to time with a small quantity of chloride of lime in a bucket of water poured down each of the gully-holes; but this should be done early in the day whilst the horses are at exercise. The entire flooring of the stable should be raised about six inches above the level of the ground outside, and even more than that in very damp situations. The construction of racks and mangers needs no particular remark, except it be that the accessibility should be studied. But it may be remarked that, notwithstanding the superior advantage of manger feeding (*i. e.*, the use of cut fodder), the rack is not superseded because the variety is beneficial. The stall-boards or panels parting the stalls should be sufficiently high to prevent the horses from stretching over and biting one another. The height of the stable should not be less than fourteen feet, if that can be spared. It is better to decrease the depth of the loft than the pitch of the stable; and the ceiling should be well plastered. In a four-stall stable there should be two ventilators at each side, or at each end, within six inches of the ceiling, protected by double *perforated metal plates*. These plates should be movable, so that one with a smaller drill might be used in cold, searching weather, and that with the larger orifices when a freer *current* of air was allowable. The loop-holes or orifices in the wall should be about eight inches deep by about twelve to fifteen inches long, and there should be means of closing one or more of them altogether at need. The number of these ventilators should be increased or lessened according to the size of the stable and the number of horses which it was constructed to accommodate. If possible the door of the stable should be so constructed as to lead into an outer recess (not shut off); so that, if you entered having the stable on your right hand, extending lengthways from you, you would have to turn to the right to enter the main body of the stable, and would then have the full length of the stable facing you to the extremity of the clear passage, the stalls being still on your right hand in succession. The consequence of such a construction is, that no direct draft can play upon any particular part of the stable; whereas if the door be in the centre of the passage facing the stalls, the two middle stalls are much exposed. In a four-stall stable constructed in this manner, there should be two narrow latticed windows, the lower sill of which should not be less than from five to six feet from the ground, and of which the glass should be *painted* so as to moderate the light. These windows should be capable of being thoroughly thrown open for proper ventilation in hot weather, and during the absence of the horses, which should never be omitted. And it were desirable, either that they should be well shaded, or that they should *not* have a sunny aspect. On the same side of the stable (that is, opposite to the stalls) at an elevation of about a foot from the flooring, there should be ventilators similar to those above described, guarded on the inner side by two fan-boards spreading from the centre outwards, so as to prevent a direct current from rushing through them (as would be the case in very cold weather), and so as to disseminate the fresh air introduced through them, hither and thither.

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* This drain should lead to a reservoir at some distance from the stable, as the urine is too valuable for purposes of manure to be thrown away.

† As it is certainly preferable that the footing of the horse should be as level as possible, some persons advise that the gully-hole should be in the centre of the stall, whereby certainly a less inclination is necessary, on account of the less distance from the hole to the extremities of the stall. But even then the slope must be less regular, descending from all sides, which is also objectionable, besides that the straw or manure is likely to prevent the thorough draining away of moisture, especially as the full weight of the horse, when lying down, or trampling the litter, would tend to compress it. In all cases in which the central gully-hole is adopted, as indeed in all the gully-holes, there should be patent traps, to prevent the exhalation of any vapors or odors through them, by means of the constant presence of water in the curve of the pan.

44. Temperature of the Stable.—In hot weather the stable should be kept as cool as it can be,—for the rule that the temperature of the stable should be regulated by that of the open air, is subject to a majority of exceptions. In bleak weather without frost, the temperature within may range from ten to fifteen degrees of Fahrenheit above that of the air without. But when there is a keen frost, it is clear that a greater difference should exist. Because there is no advantage in exposing a horse to frost in his stable where he *remains inactive*, on the ground that he must needs be exposed to it out of doors when he is in *motion*. In this respect of temperature, moreover, it must be understood, that numerous modifications may occur to every rule according to the habits, condition, and sensitiveness of the animals. Suffice it to say that on one ground there is need of considerable caution: that is in avoiding *too great heat*, and especially closeness in the stable; and that the free circulation of air *should never be excluded* on account of a *few* degrees of greater or less temperature, because the foulness of the atmosphere generated by the exhalations of the animals themselves, and emanating from the urine, dung, &c., &c., will do infinitely more mischief to the horses than even a *very considerable* fall in the thermometer.

45. The Litter.—With respect to litter, as in all other matters relating to the management of the horse, we would impress upon the owner one most important and unalterable rule, which may be summed up in the words—*unremitting attention and scrupulous cleanliness.* If it be only for the course of *one* day, accumulations of foul matters in any part of the stable are highly injurious; and it is notorious that the majority of grooms are satisfied with removing ordure or wet litter *from the stall*, and that they are in the habit of *throwing it together in heaps*, on the opposite side of, or at some spot in, the stable. This is merely to avoid the most trivial exertion which would arise from removing the waste litter at once and immediately from the stable. The exhalations from these accumulations of foul litter, &c., are known to be excessively powerful and noxious, being charged with very irritating emanations; and in cold weather, when the circulation of fresh air, and the rapid exit of vapors, are necessarily arrested to a great degree, the atmosphere becomes so charged with noxious ingredients as to be seriously injurious. It is not to be doubted that many more of the coughs, which affect horses which are always housed in the stable when unemployed, are attributable to want of attention to this particular than to other causes.

First, therefore, the litter in every stall should be constantly and carefully attended to, for the removal of what is the least soiled or *moist.*

Secondly, also, it should be removed at once and altogether from the stable.

The horse, when standing in the stable, should never be without a certain quantity of litter under him, as, owing to the slipperiness of the pavement, he is never assured of his footing without it, and dreads to extend his legs backward, a position necessary for staling. He also stands with far less strain on the toes (which may otherwise be occasioned by the slope of the pavement and the sense of insecurity).

The best kind of litter consists of wheat or oat straw; but in farm-yard stables, pea straw and the like are also often used.

These should not, and need not, however, be introduced into the *private* stable.

Previous to making up the bed for the night, the flooring of every stall should be laid bare, and thoroughly swept. We may then strew the fresh or *well-dried* straw pretty plentifully over the whole flooring, subsequently, also, packing it deeper and more abundantly on each side.

46. Grooming.—Except in cases of *wet* weather, the horse should always be groomed outside the stable. *Cold* is no reason for indoor grooming, inasmuch as the friction will be sufficient to guard against any ill effects of cold; and inasmuch, moreover, as the action of fresh air upon the horse, during the operation of grooming, will materially invigorate him. It is a mistake to scarify the skin in grooming; few horses require more than a stout and hard brush, briskly applied; and the currycomb should always be lightly used. Friction applied to the legs (downward), with the hand, is very beneficial, especially after violent exertion. No horse should be left without grooming after hard work, or when the coat has become charged with dust, or caked by sweat; indeed, all work should be immediately followed up by grooming. If at *night*, this should be done *within;* if in the day (without rain), as already stated, *without*. After very severe exertion, washing the legs with lukewarm water should constitute a part of the operation of grooming; but they must be well dried. For horses which are never housed, but which are turned out even directly after work—the grooming when *turned out* (after work) or *taken up* (before work), should consist in the removal of *dirt*, such as mud, dust, &c. It is very desirable that the *skin* should not be disturbed. Beyond the removal of *dirt*, therefore, brushing with a *soft* brush, or passing a dry cloth briskly over the coat, should constitute a sufficient grooming. But this need not be done *carelessly* or *lazily*, nor be *omitted*.

47. **Exercise.**—The exercise, by which is to be understood the *substitute* for *work*, in horses whose employment is fitful and irregular, is distinctly involved in the question of treatment and management as connected with the stable, and forms a most important branch of this section of the subject. The lack of proper, regular, and methodical exercise in horses, which, from want of occasion to use them, would, therefore, stand in the stable the whole day, is one of the most frequent causes of affections incidental to the respiratory organs or to the feet. Exercise is only rendered the more necessary by occasional and irregular calls for *extreme exertion;* and during the intervals between such occasions, the substitute for work should never be omitted, otherwise the animal becomes incapacitated from performing any extraordinary journey, or will be injured by it. It is ever desirable that this duty should be performed under the owner's eye, or by him, if he has the leisure or inclination to drive or mount his horse for two or three hours in the course of the day. In taking horses out to exercise, they should never be suffered to move at more than foot-pace, until they have been out a good half hour; the pace may then be quickened, according to the general service required of the animal; but if heated (which it is desirable to avoid altogether), he should be again exercised at foot-pace until perfectly cool, before being reconducted to the stable. The better period of the day for exercise is from three to two hours before noon; but it is yet better, if there be time to devote to this duty, that the horse should be exercised for about an hour and a half in the morning, and for the same length of time in the afternoon. In summer, the morning hours should be (after feeding) between seven and nine o'clock, especially in very hot weather; in cool weather, they may range from eight to eleven o'clock; the afternoon hours, during the same season, should range from four till eight o'clock, according to the temperature. In winter, the morning hours may extend from nine

till eleven o'clock, and in the afternoon from two till five o'clock. In frosty weather, and particularly when the roads are insecure and slippery, the exercise should be conducted very carefully. The horse should not be exercised *in the morning* before feeding, nor within half an hour after he has fed.

With respect to horses which are devoted to regular and easy work, that should be understood to constitute the best method of exercising.

48. The Feeding.—Some horses require feeding more frequently than others, owing to the greater proportion of time during which they are employed.

All horses require feeding often, and comparatively little at a time. No horse should be regularly fed less than *four* times a day, although many are only fed twice, and the majority only three times.

All horses should be fed as nearly at regular periods as possible; and when the employment prevents the housing and unharnessing of the animal, it is ever advisable that some contrivance should be adopted to feed him otherwise. The nose-bag answers this purpose.

The habit of giving double quantities at a time, to provide for extra work, is as injurious as it is ridiculous; for if the horse really feeds, and consumes the food offered to him, he is only rendered the less capable of exertion; and if he does not, he spoils his appetite, and wastes his food.

49. Drink.—The horse should not, in general, have water offered to him whilst feeding, nor immediately before feeding, nor does he require to drink so frequently; but when exposed to severe exertion, in hot and dusty weather, an exception to this rule will hold good. In such cases it is often advantageous to allow half a pailful of water just before the feed, and as much more, if the horse will take it, towards the close of it.

In general, the horse will not require water more than three times a day; but in such cases as constitute the last-named exception, it is desirable to regulate the frequency of drinking by the inclinations of the animal. Neither should the horse (in work) be allowed unlimited access to water. A small pailful, on each occasion of the periodical offer of drink, may be afforded, and in general will be more than enough.

The water should be *soft* (yet clean), and free from the infusion of extraneous substances. Spring water should generally be avoided, unless, as is sometimes the case, it be *soft*, or unless the constant habit of using it has accustomed the animal to it. Even then, particularly when heated, he should not be suffered to swallow it quite cold.

50. Green or Fresh Food.—Between the end of April and the beginning of August especially, one of the better methods of providing the horse with green food is, to turn him out to good meadow grass, where there are *no trees*, or very *few*, and where the herbage has plenty of bottom; but for horses in constant work, there is much inconvenience attending this, much time being lost in taking them up. This is not a reason, however, for withholding the green food during the season, more especially from brood-mares; all horses, and especially the latter (except, indeed, race-horses, during the currency of repeated engagements), being much benefited by such food.

During the spring, summer, and autumn, we have, amongst the most desirable green or fresh fodder, *sainfoin*, *lucern*, clover, rye, and tares; and during the winter, carrots, potatoes, and Swede turnips in particular.

The potatoes should be boiled, although they may also be given raw.

The quantities and relative proportions of these articles of food, identically or in respect of dry food (which should never be entirely withheld from the working horse), should be regulated according to the discretion of the stableman or groom, because these are matters to be governed by the particular condition, habits, &c., of each individual animal.

The carrots, turnips, and potatoes are included under the category of manger feeding, and should be cut up small with the chaff or corn. The last, if boiled, should crumble up easily, and should thus be well mixed with the other food. Firm, adhesive potatoes are not good. Potatoes render water less necessary and even injurious to the horse, and the drink should be more sparingly afforded when they constitute a portion of the food.

51. Dry (*i. e.*, preserved) **Food.**—Under this head are included *oats*, *beans*, pease, barley, wheat, *hay* (otherwise dried green fodder) of every variety, and chaff, consisting of the last, and of wheat, oat, and barley-straw. To these might also be added, as supplementary articles derivable from some of the former,—malt, which is occasionally used in mashes,—*grains*, which are very commonly used for draught-horses,—*bran*, which is sometimes used *dry*, but oftener (and very advantageously in cases of fatigue, cold, and the like) in *mashes*,—*oat and other meals*, oatmeal being very advantageously mixed with the water for sick horses.

52. Manger Feeding.—The question of *dry food* involves that of manger feeding, in which are also included, as above stated, some of the fresh meats. Oats, beans, pease, barley, wheat, grains, bran, and meal, are necessarily given in the manger; hay (including dry clover, sainfoin, lucern, &c.) is far preferably though *not* exclusively so, and chaff, including a proportion of straw, whether wheat, oats, or barley, is invariably so.

The proportion of straw to hay (whether of clover, sainfoin, &c.), in the chaff should be regulated according to the degree of intensity or rapidity required in the work of the horse. Where exceeding fleetness is required, the food consists chiefly of *grain*, the addition of chaff being only sufficient to render *perfect mastication inevitable.* It is ever preferable to *bruise or crush* the grain, whether oats, wheat, barley, beans, or pease; the splitting of the latter is hardly sufficient: unless they are so crushed and bruised they will not be thoroughly mingled with the chaff, so as to compel the horse to take both at the same time, but will sink to the bottom of the manger, whence the horse will pick them, in many cases avoiding the chaff.

In this country oats* and corn constitute the food by far the most important and generally used; barley being rarely used, and wheat still more so. Pease are only (or almost only) used for heavy draught-horses.

In the absence of green food (*i. e.*, during the winter), especially when other fodder is wanting, the horse in regular work should be allowed about twelve pounds of oats a day, divided into four feeds of three pounds each, or thereabouts.

All damaged food should be alike avoided, whether hay or grain; it is the most mistaken economy to give horses bad food.

53. Rack Feeding.—The result of general experience, notwithstanding the opinion of very high authorities, would seem to show that rack feeding should not wholly be abandoned; and it seems to be the practice of the majority of the most successful breeders of horses, to persist in providing the animal with a little hay in the rack *at night.*

This hay slightly moistened with salt water is better than perfectly dry. As a general rule, however, there can be no question that where rack feeding is persisted in, under the idea that it costs less, it is *a great mistake, inasmuch as it will ever be a most wasteful method under very advantageous circumstances.* If adopted as a mere accessory and sparingly, it is free from this important objection, and frequently proves very advantageous to horses. The quality of the hay (whether of grass, clover, sainfoin, or lucern) should be as unexceptionable for this purpose, as for the mixture of chaff described above.

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* *New* oats should be avoided, if possible. Old oats are always preferable. If new oats must be used, however, they should be slightly and gently kiln-dried. The same may be said of oats which have been harvested in a damp and unfavorable season.

54. Of the General Treatment of the Feet, and Shoeing.—*Treatment of the feet in the stable, &c.:* So much necessarily depends upon the condition of the feet, and, moreover, they are liable to so great a variety of casualties, that too great attention cannot be paid to this particular. It is by no means supererogatory to examine the hoofs twice every day, lest any particular circumstance respecting the adaptation of the shoes (which by the wear will betray ill-fit), or respecting the condition of the foot itself, should otherwise escape notice until lameness calls the attention to the matter, perhaps, when it is too late.

Horses which have not much hair about the heel should be carefully sponged after every journey, or if the hair be long and thick, they should be rubbed with the hand or with a twisted bunch of hay,* &c., so as to insure the removal of any dirt which may have accumulated about them. The whole circuit of each shoe on the under and inner side should then be probed with a proper hook or pick for the removal of small pieces of sharp stone which may be lodged in the foot.

The shoes should be examined to ascertain if there be any misfit betrayed by the wear, indicating, for instance, an uneven surface or unequal pressure, especially if the gait of the horse is restrained, the step short, snatching, and irregular, &c. The outer circuit of the hoof should also be examined to ascertain if any of the nails have given way, or their clinched points have become reverted so as to lacerate the next leg. The feet should likewise be examined to ascertain if, by any means, the construction of the shoe be such as to wound the adjacent joint, when in action.

Whilst standing in the stable the horse should constantly have his feet stopped either with moist tow or cowdung (the latter being often the most available), or with pads constructed on purpose. The two former methods are undoubtedly preferable. This is done simply by filling the cavity of the hoof underneath with the material used. The upper circumference of the hoofs should also be moistened from time to time with oil and tar, in the propórtion of seven parts of the former to two of the latter, a practice which will greatly contribute to the soundness of the hoof.

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* If washed (under these circumstances), care should be taken to dry the parts thoroughly.

When the work of the horse is not sufficient to wear out or cast the shoes, or any of them, so as to render fresh shoeing inevitable, *the animal should be reshod regularly at intervals of from four to five weeks.*

When turned out, it is ever advisable to remove the shoes altogether, at all events for a time, or else to substitute the *grazing shoes*, hereafter described.

55. Shoeing.—Shoeing necessarily deserves the most careful attention, as involving the condition of the foot, and consequently the capability of the horse.

The most important considerations which should govern the proprietor of the horse with reference to *shoeing*, may be summed up under the following general heads:

1. The construction of the shoe, as a general rule, and its modifications.
2. The nature of the horse's work, and the adaptation of the shoe to such work.
3. The condition of the foot for a similar adaptation.
4. The paring or other preparation of the foot to receive the shoe.
5. The fitting and fixing of the shoe.
6. Whether local injurious effects (either temporary or permanent) are produced by the shoes, and what are the expedients whereby these may be avoided or modified.

1*a*. *The Construction of the Shoe (in general) and its Modifications.*—The common *concave shoe* will be found generally adapted to all purposes. It should offer a flat and level surface for the grounding of the foot, i. e., *it should be such, that when the horse is stationary and the legs are perfectly erect, the pressure on all parts of the shoe may be equal.* This rule most especially applies to the shoes of the fore feet, in which *calkings* should rarely, if ever, be tolerated. The outer edge (of the ground surface) should be furnished with a groove in which the nail-holes are to be punched, so that when fitted to the foot the heads of the nails may be imbedded in the shoe, and not project at all, or very little. The utmost number of nails inserted in this side should be five, in which case four would be sufficient for the inner edge. In the majority of cases, *when a horse is only employed for light work, four nails will suffice for the outer and three for the inner edge.* The nail-holes should all be punched as far forward as possible, *i. e.*, as far from the heel as can be, especially on the inner edge; on the outer edge the additional nail may be one point nearer to the heel. The nail-holes should also be punched as near the outer circumference of the shoe as is consistent with the hold required of the nails. The concave shoe is sloped off on the side fitted to the horn, nearly from the nail-holes gradually to the inner circumference, which is then very thin except at the heels, where the full width of the web (or plate) should be of equal thickness.

The width of the web and the length of the heels should be adapted to the width and extent of the crust, so that the shoe may not either interfere with the office of the sole or frog, or leave any portion of the crust overhanging.

For the hunter or racer, the degree of slope given to the upper or foot side of the shoe must be materially modified. For employments of this kind we must not admit of so much space being left between the shoe and the sole. The heels of the fore shoes, also, often require to be shortened, to provide against the detachment of the fore shoe by the tip of the hind shoe.

1*b*. *Half Shoes, or Grazing Shoes or Tips.*—It is always preferable, if possible, to withdraw the shoes altogether when a horse is turned out to grass, if it be known that he is not addicted to any tricks whereby he will be likely to injure the foot. But if this be the case, and he has a frequent habit of pawing violently, &c., it will be advisable to provide him with a pair of *fore* shoes, tapered off and *incompleted* towards the heel, so that the toes are guarded thereby. They should cover the front part of the crust only, because the more is left free the better will the foot recover from the ill effects of *shoeing*, or of *bad shoeing* in particular.

1*c*. *Rough or Frost Shoes.*—When there has been snow on the ground previous to a frost, and the roads are rendered dangerously slippery, it will *sometimes* be necessary to resort to calkings (*i. e.*, to the turning down of the heels) even for the *fore shoes*, and *always* for the *hind shoes.* In many parts of this country, in winter, it becomes necessary to have all the heel and toe calks alike on fore and hind feet, made of steel and very sharp. But it should be observed that a very erroneous practice exists in this respect, namely, that of turning the *outer* edge of the heel only, without raising the inner edge as well, whereby the footing is rendered unlevel, and it should be held as an invariable rule either that both ends must be turned (which is the better method), or that the crust of the inner edge of the shoe must be thickened for the same purpose.

Calkings should, however, be abandoned in the *fore* shoes as soon as ever the emergency which rendered them necessary has ceased, because at best with any horses, whatever be their employment, they are but an expedient which by abuse may become more injurious than the hazards which they were adopted to guard against.

1*d*. *Calkings*.—Calkings are wholly unnecessary for *saddle*-horses of any kind, except in such instances as the preceding. But they are in general desirable for the *hind shoes* of draught-horses of every description, whether carriage-horses or horses adapted to heavy work. It is not unfrequent, however, that this appliance is grievously exaggerated. The calkings only require to be sufficiently prominent to give the hind feet their full purchase, to prevent the horse from slipping or to facilitate his recovery when slipping, and to render stopping easier and of less strain. In every case in which calkings are used, whether on both sides of the heel or on the outer side only, the two sides should be brought to a level by the means named in the last paragraph. (See 1*c*, p. 73.)

1*e*. *Hind Shoes Generally, and Hind Shoes for Draught-Horses in Particular*.—The hind shoe requires some special notice, because for horses adapted to every description of employment, they should differ from the fore shoe in certain particulars of shape and construction. For the hunter and racer they need not be shortened at the heel, but would preferably be suffered to cover that part thoroughly; and for all horses alike they should be less confined at the heel and broader at the toe. Inasmuch, moreover, as there is greater likelihood of the hind shoe being cast, on account of the peculiar action of the foot and the excessive purchase applied to it for the purpose of motion, it were advisable to place the nails on both sides as much nearer to the heel as may safely be done. For horses which are addicted to *forging* (especially), the hind shoes should be sloped away inwards from the edge of the crust: *i. e.*, that the web should be exactly fitted to the crust on the upper or foot side, but should have a narrower surface on the exterior face. For all draught-horses *calkings* should be adopted for the hind shoes (see 1*d*, above), and the toe should be rendered more durable by means of a surface of steel welded into the front circumference of the shoe. This is the more essential when the fore edge is sloped off as has been just described; and it is for want of this precaution that we so often notice heavy draught-horses, dragging immense weights on pavement and up an ascending inclination, slip away at the hind feet; this arises from the toe of the hind shoe having been worn *round* instead of offering an *edge* for the surer purchase of the horse.

1*f*. *Bar Shoes.*—These are sometimes useful as a temporary expedient, when there is some disease or affection of the foot which renders it imperative to relieve the part affected from pressure or contact. But it should be remarked that the bar shoe is, in reality, only fit to be used for *exercise* at a foot-pace, and that when it is used for the purpose of *working* a horse in such a condition, it is likely directly and indirectly to become the instrument in doing serious injury to the animal. It is questionable whether, in the majority of cases in which affections (except corns) occur to render the use of such shoes necessary, it would not be preferable at once to remove the shoes altogether, and to turn the horse out or to lay him by for a time. The bar shoe consists simply in the completion of the circumference of the web; it cannot safely be used for any length of time.

1*g*. *Clips,*—which consists in the reverting or turning up in a point the fore edge of the front shoes,—are very useful as applied to horses which have a trick of pawing with the fore feet, so as to wear out the shoes, as also for horses applied to very heavy draught work, and which dig the toes of the fore feet with great force into the ground to acquire a powerful foothold. But clips should, if possible, be dispensed with from time to time in every case, and should always be abandoned when they evidently serve to restrict the due expansion of the crust, which is easily observable by their becoming imbedded in the horn.

1. *Summary of Particulars respecting the Construction of the Shoes.*—The construction of the shoes should be such as to fit exactly to the circumference of the crust, to cover the heels sufficiently, especially to protect the seat of the corn, wherefore the web should not be narrowed at that point, and so as to expose injured parts to as little concussion, &c., as possible. The slope or bevel of the foot side of the shoe as well as its thickness (with regard to the projection of the crust), must be such as to allow the frog to descend just sufficiently to prevent contraction: *i. e.*, the frog must barely touch the ground at the fall of the foot, but must descend as nearly to such a point relatively to the level of the outer surface of the shoe as possible, without being thereby exposed to a blow when the foot is grounded. The shoe must also be so constructed that casting and unequal wear are to the utmost avoided, and that cutting, forging, &c., are as much obviated as can be (when the defective conformation of the animal renders him subject to such accidents). As regards cutting, due attention must be paid to the inner edge of the shoe, and to the clenches of the nails. Again the shoes, as has been observed in another section, should not be allowed to remain unchanged more than a month, even if they would wear longer; they should never

be *broader than the foot, as there is no advantage in their being so, and as such a construction provokes cutting.* And lastly, it were as well for all horses if they were *deprived of shoes altogether for a certain time in the course of every season,* because there are instances in which no precaution in the shoeing will obviate ill-consequences to which any particular animal has a natural predisposition, and which are provoked and aggravated by the shoes.

2. *The Nature of the Horse's Work, and the Adaptation of the Shoe to such Work.*—Apart from the question of construction, there is yet one of great importance in this respect, namely, that of weight. In proportion to the speed, and lightness of the work expected of horses, should be the thickness and weight of the shoes. For the race-horse, they should be as thin as possible to retain their shape; for hunters, they should be but little heavier; for the road saddle-horse they should have more substance, but only in comparison to the substance of the leg, the strength and bulk of the horse generally, and the size of the foot; for the carriage-horse, they require to be more bulky, stronger, and heavier; and for the heavy draught-horse, the greatest weight and substance is needed. In all other respects, we have already dilated upon the adaptation of the shoe to the employment of the horse. (See "Construction of the Shoe, &c.," *ante.*)

3. *The Condition of the Foot, and the Adaptation of the Shoe thereto.*—In shoeing the horse, it is always most essential that the condition of the foot should be carefully examined, and that the shoe should be strictly adapted to it so as to secure him from pain and injury. The pumiced foot, for instance, requires a deeper bevel on the upper or foot side of the shoe; when corns frequently become troublesome, the heels require more breadth; when the horn is brittle, and has been lacerated, great care should be taken respecting the position of the nails; when there is a disposition to contraction, it is requisite to drive the nails further forward, and to allow the frog to descend as much as possible; for sand-crack and thrushes, we have the bar shoe; in cases of injury, or of inflammatory action seated about the foot and adjacent joints, or even of strains or other injuries affecting the leg generally, we resort to an *intermediate sole,* inserted between the shoe and the crust, and sometimes covering the whole surface of the foot, as follows:

3*a*. *The Artificial Sole.**—Some practitioners have recommended elastic substances, such as caoutchouc, &c., for this purpose; but it does not appear that any are so universally acceptable as felt or leather. The general method is to cut a piece of felt or leather to fit the web of the shoe, and to place it next to the crust, fastening the shoe over it. In some cases, also, a piece of leather is cut to fit the whole surface of the foot, and the stopping or dressing, of what kind soever, is inserted within it. The shoe is then fastened over the whole. This method, however, only applies to injuries affecting the entire surface of the *foot*, principally when there is not sufficient recession of the parts to relieve them from irritation (or contact) by the grounding of the feet. This application, however, involves a respite from all *work;* and the horse must only be *exercised* at a foot-pace whilst this appliance is used. In other respects we have already noticed the adaptation of the shoe to the condition of the foot, under the head of "Construction of the Shoe, &c.," which see.

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* The additional insecurity given to the fastening of the shoes by these soles renders their use as limited as possible.

4. *The Paring and other Preparation of the Foot to Receive the Shoe.*—The first operation is, necessarily, to remove the former shoes, or the remaining portion of them, and *very carefully* to extract the old nails, so as not to lacerate the horn. The clenches require to be straightened, or filed down as close as possible; and if then the nails are not easily drawn, they must be gently punched back from the circumference of the foot. The shoe should never be *wrenched off* by force. The rough edges of the crust must then be submitted to the action of the rasp. In most cases there is a considerable quantity of superfluous horn, which requires to be removed, and this is done with the *paring knife*, until, upon compression, the sole is found to give. *Paring, properly conducted, is the greatest safeguard against lameness.* There should not be more horn left than sufficient to protect the inner and sensible portions of the foot. But here, again, very great attention must be paid to the *condition of the foot*, for there is no regular rule for the quantity of horn which may require to be removed; and when the horn has grown very superabundant and hard, it is frequently necessary to soften it, by the application of a heated iron plate, before it can be sufficiently pared without the risk of chipping it irregularly. It should also be observed, that in cases of *pumiced foot*, we must rest satisfied with removing those portions of horn which have become lacerated round the edges of the crust. We should also carefully notice any irregularities in the *wear* of the foot, and *pare* accordingly, so as to bring all parts level. The paring as applied to the frog, should be such as to allow it, as nearly as possible, to rest on the ground when the horse is shod, without being actually exposed to a shock when the foot is grounded. Meanwhile, we must not lose sight of the condition of the heels, which are generally

more worn on the inner than on the outer edge. The latter, therefore, requires more artificial reduction, the bar being left level with the crust; and we should notice particularly, *that the general level of the crust is from one-eighth to three-sixteenths of an inch more prominent than the sole, and that the entire circumference is perfectly level.*

5. *The Fitting and Fixing of the Shoe.*—First of all, let due care be taken that the construction of the shoe about to be applied is of equal thickness throughout (except in cases of calkings, for which see "Construction of the Shoe, &c."); next, that the general construction of the shoe is in accordance with the rules already laid down (see *ibid.*); and, again, that the shoe is exactly fitted to the foot, according to the foregoing regulations. The shoe will then be heated sufficiently to singe the horn, and gently applied to the surface of the crust, so as to mark any irregularities in its surface, which must be rasped down. The shoe will then be cooled and fastened on, care being taken that the nails are placed as before described, and that they are only allowed to pass to a sufficient depth in the horn to have a firm hold, without risking any injury to the sensitive portions of the foot above. They will be driven more or less obliquely, so as to insure their passing out at the height required above the ground surface of the crust, when they will be clenched, the superfluous ends wrung off, and the butts reclenched upon the face of a duplicate hammer. In other respects, sufficient directions as to the number and position of the nails have been given under the head of "Construction of the Shoe, &c.," which see.

6. *Whether Local Injurious Effects (either Temporary or Permanent) are Produced by the Shoes, and how they may be Avoided?*—This is a question which is necessarily involved, in most part, in all the previous divisions of this subject; there is, however, one thing to be added to what has already been said, namely, that the principal injury caused by shoeing (which is an indispensable attribute of almost every artificial resource) consists in the unavoidable check given to the natural development of the feet. As a part of this interference, we may mention the arrest of *expansion* incidental to the horny excrescence of the foot. Numerous devices, all equally ineffectual, have been suggested, whereby the horse might be provided with a shoe, as securely fastened, without in any way impeding the operation in question. There is really but one method which can serve this purpose (and that but partially) without doing greater injury in other ways, and this is, to adopt the plan of fastening the shoes on the *outer edge and fore part of the circumference only*, allowing no nails to be inserted along the *inner edge.*

This method answers very well, if the shoes are frequently examined lest they be loose, for horses which are only employed in *light work;* but it is perfectly inapplicable to the heavy draught-horse, the coach-horse, &c.; and it is not by any means safe to trust to it for racers and hunters. The ordinary *hackney or carriage horse* may do very well with it.

56. Clipping.—This operation, which has been sanctioned by fashion and fancy, rather than from beneficial results, needs but few remarks:

1st. That it is one of many useless artificial appliances, as far as necessity is concerned.

2d. That inasmuch as all artificial means should be as much as possible avoided, this should be eschewed above all others.

3d. That it does not even answer the purpose for which it was adopted more positively than nature would provide for the same object, with a little additional labor.

4th. That, on the contrary, whereas a well-groomed and unshorn coat would have the utmost smoothness and gloss, the mischievous effects of the exposure produced by clipping are likely to deprive the coat of these perfections.

5th. That by causing the process of radiation to operate too immediately upon the skin and its vessels, very serious injury is done to the animal.

6th, and lastly. That the custom was invented, and has been sustained by lazy grooms, for their own convenience alone, because they are thereby secured from much of the application so beneficial to the animal, which would have been rendered compulsory by an entire and unshorn coat.

SECTION II.

57. Of the Ox, Cow, &c.—The classification of this species of cattle is somewhat arbitrary; and almost every writer on the subject has assumed the exclusive privilege of instituting a classification of his own. Our space will not allow us to enter very elaborately into this branch of the subject, nor does it strictly appertain to our province; but we will endeavor briefly to sum up the varieties of cattle, especially cultivated in Great Britain, and to give a short review of their respective merits.*

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* It will be observed that this account of the varieties of cattle belongs to Great Britain; but it will be read with still greater interest in America.

We may adopt the general classification which has become popular of late, without prejudicing any scientific distinctions, and may first divide the cattle bred and fed in the United Kingdom, into five chief varieties, namely:

1. The *short horns,* whose origin is attributed to the counties of York and Durham, and subsequently to the northern counties of England generally, and which are remarkable for the *quantity* rather than the *quality* of *the milk,* but are considered as *expensive and unprofitable feeders,* and *indifferent* as *fattening cattle,* producing, in general, a quality of meat not highly esteemed. This breed is very generally fed in Lincolnshire.

2. The *crumpled horns,* which, as a distinct variety, are not acknowledged as indigenous to this country, but are attributed to Alderney and the adjacent islands. These are but little fed in Great Britain; and they are not esteemed as generally profitable cattle, because, although the milk is of the *finest quality,* it is but *very scanty,* and is consequently rather choice than productive. They are, however, fattened with great facility.

3. The *polled cattle, or cattle without horns,* which include the *Galloways,* chiefly black, some dark gray-brown, or with a few white spots, yielding *little,* rich milk, and a remarkably fine quality of meat; the *Angus breed,* chiefly black, with some spots of white, peculiar for the facility with which they are fattened; the *Norfolk cattle,* which are principally brown-red, with a ruddy rim round the eyes, a few also being black, or having an admixture of white: they are profitable grazers; and the Suffolk cattle (Suffolk dun-cow), in general light brown-red, brownish cream-colored, &c., being very plenteous yielders of milk, of which chiefly butter, and but very little tolerable cheese, is made, and being, moreover, very ready fatteners. To these might be added a few subordinate and unimportant varieties; the Dumfries breed being, in point of fact, a mere offset of the Galloway.

4. The *long horns,* including, first, the *Irish breed* (long horns properly so called), which are but little esteemed, but which, under the modifications which they have assumed in the hands of experienced English breeders, and under the denomination of the *Craven and Leicester breeds,* have become very profitable grazers and fatteners, but indifferent dairy cattle. Another variety of this breed has arisen in Lancashire, where it has been preferred for the purposes of the dairy, and yields the material of some of the best cheese. Another variety, again, is attributable to Derbyshire and the adjacent districts, where the *long-horned* cattle have been found excellent for dairy purposes,

but very indifferent and unprofitable for fattening. Cheshire, Warwickshire, Worcestershire, Staffordshire, and Shropshire, also yield a portion of long horns, which are in general more profitably retained for the dairy than for slaughter. The Shropshire breed is, however, superior as to its fattening qualifications. In the majority of these districts, as of many others in which the *long horns* were much esteemed half a century ago, they have been supplanted by the *short and middle* horns.

5. The *middle horns*, which embrace the most productive, and some of the most hardy of British cattle. Amongst these may be ranked the *Cornish cattle*, a small, very hardy, black variety, of very little expense for provender, good yielders of milk, and not by any means unprofitable feeders for fattening; they are, moreover, like the *Devon cattle*, most useful draught beasts for the plough, &c. The milk yielded by them is rich, and produces exquisite cream, and very excellent butter. Another variety which is numbered amongst the middle horns, and which, in fact, constitutes the stock breed of the *Dorset and Somerset* breeds, both of which excel for feeding, milking, fattening, and working, is the *North Devon* breed, which is justly esteemed as one of the best and most profitable which we rear. To the same list we may also add the Herefordshire (inferior for the dairy, but far superior for slaughter), the Gloucestershire (excelling for dairy purposes), the *Sussex cattle*, which excel rather for the facility of fattening, and the superior quality of the meat, than for quality or quantity of milk; they are also very good workers for purposes of husbandry. And, finally, the multitude of local varieties amongst the WELSH and SCOTCH BREEDS, all of which are much sought after for their hardy habits and profitable productiveness.

58. Of the Breeding and Rearing of the Ox, Cow, &c.—*Of Breeding:* In order to become a successful breeder of cattle, it is necessary that the owner should devote himself to some extent to the study of the physiology of the cattle to which he particularly directs his attention. Too much regard is paid in general to mere prejudices, most of which are either founded in error, or lead to an erroneous conclusion from a sound basis. It will also make a great deal of difference whether, in the breeding of cattle, the proprietor has a purely commercial object, or whether it is rather a matter of research and amusement which is sought. If the former, it is clear that his method must be limited by local capabilities, and must be governed by all the circumstances attending the soil which he cultivates, the qualities in request, and the markets which are accessible to him; but if he has means and inclination for breeding cattle upon a more comprehensive, but certainly, to say the least of it, more speculative principle, he will venture to set aside these mere circumstantial details, in the consideration of general and universal perfection. There is a very erroneous idea amongst some breeders, that if they breed from good cows they are sure of good stock; the truth is, that, as a general rule, the influence of the male in animals of this kind is considerably greater than that of the female (if, indeed, the male be possessed of any distinctive features). The qualifications for breeding stock, both male and female, are the excellencies sought in the offspring; ill-conditioned, unproductive, and otherwise inferior parents cannot be expected to yield young possessing excellencies which would be merely adventitious. The same rule holds good, therefore, in respect of animals of this kind, as has already been cited in respect of horses; that in selecting breeding stock, it is necessary to look for all desirable qualities, and to breed as little as possible from defective animals.

In the male, we should look for a sound frame, freedom from customary diseases, strong, sinewy nervous construction, ample dimensions and just proportions, kindly feeding, and the making of sound flesh; the entire bull-calf, to be reared for breeding, being chosen from a stock which had yielded profitable oxen, and being selected as an excellent specimen of his breed, and therefore reserved. In the female we should look for—

1st. A copious supply of milk, engendered without wasteful feeding.

2d. Milk of a rich quality, and yielding a large proportion of butter, &c.

3d. The continuation of the production of milk upon ordinary feeding.

4th. Quietness, tractability, gentleness, kindness towards her young, and the absence of failures or difficulties in delivery, &c.

5th. A disposition to fatten readily if set aside as a milch cow.

The absurd idea of running after breeding-stock hither and thither to a distance, and transplanting them to one's own pasture, for the purpose of establishing, replenishing, or ameliorating a stock of cattle, cannot be too earnestly deprecated. The adoption of no fresh breeding-stock (not indigenous to the locality and soil) should be suffered until all the circumstances relating to the climate, pasture, general keep, &c., of its former locality have been distinctly ascertained; because, if the previous circumstances in these respects were better than those relating to the soil and locality to which you are desirous of transplanting it, it will inevitably become deteriorated.

Always bring breeding-stock from poor to rich soil, &c., if possible; thus they will be improved.

But, although these precautions are essential to the beneficial introduction of new stock, it is yet most desirable, and equally essential, that new blood should be introduced into every herd, without adopting a different or inapposite breed wherefrom to introduce such new blood. Every year, if possible, and certainly not more rarely than every fourth year, it were advisable to procure a fresh bull from some distant place, observing the precautions just recited. The bull, from which it is sought to breed in this way, should correspond in the general characteristics of the breed to which it is wished to introduce him; because, if the stock be good, it is hardly worth while to run the risk of losing actual advantages in engendering a modified breed, upon the mere speculation that the original stock may be improved by the modification.

Of the Age and Season for Breeding.—Two other questions, which are too often overlooked in the mistaken pursuit of profit in the breeding of cattle, are the age of both the male and female, from which it is proposed to breed, and the time of year or season at which the calf should be born. Instances of breeding either from a yearling bull or heifer are not wanting; whereas both are much deteriorated by such a practice, especially the latter, which, if it be rendered productive a little *sooner*, continues to yield for a far *shorter time*, even if indeed it does not encounter difficulties in pregnancy or delivery. Besides these reasons, if the yearling heifer, which is not full grown, be in calf, a great portion of the strength which would otherwise have gone to develop her frame and capabilities, will be suddenly diverted to the sustenance of a new existence, and neither will end by being complete. *We may safely breed from heifers of from twenty-four to thirty months old,* and should not defer sending them to the bull for the first time after they are three years and a half old. The bull should not at first be allowed to serve until he has completed his second year. The nature of the pasture, and of the climate, however, in many instances, makes a difference of six months in the maturity of the animal; and with cattle reared and fed on very rich pastures, and in fine, warm, sheltered, and luxuriant valleys, this must be taken into consideration.

Next, with respect to the time of year at which it is desirable to secure the birth of the calf. In the first place, this must depend upon the relative local values of calves at different seasons; in the next place, it should be governed by the season at which the pasturage becomes plentiful. Taking, however, the average duration of pregnancy in the cow to be nine months, or rather thirty-six weeks, or varying from thirty-four to forty-two weeks, we may easily arrange matters, so that the parturition may take place about the time at which it is desired.

59. Of Pregnancy, how Distinguished and how Managed.—Inasmuch as all the productive or profitable qualities of the cow are involved in parturition, it is clear that pregnancy is the most important period; and inasmuch as it is a period of great risk, and subject to a multiplicity of accidents, it requires attention in comparison to the values and dangers attending and resulting from it. It is also clear that much consequence is attributable to the accurate discrimination of the earliest periods of pregnancy, because if no regard be paid to this, the cow may go several months after the period of copulation without externally betraying the fact that no conception has taken place; and all this time will have expired worse than profitlessly. To modern discovery, however, we owe a most important assistance in this respect. It has been ascertained that the action of the heart is perfectly distinguishable in the young, and that the peculiar characteristics of the circulation about the womb of the pregnant beast are also distinguishable at periods varying from 45 to 60 days after conception. The easiest method of testing these characteristic indications consists in applying the ear, assisted with the instrument called a stethoscope, to the various parts of the right side, at the same time ascertaining the state of the pulsations in the heart of the pregnant beast by placing the palm of the hand on the left side, and also by feeling the temporal artery. Having thus ascertained the condition of the circulation, as respects the adult animal, we shall not be slow to perceive any intermediate, more rapid, *and double* pulsations, which will be distinctly audible in the side, if the animal be pregnant, but which will be wanting if pregnancy has not accrued.

Having been satisfied that the cow has failed to conceive, we may avoid losing more time, and either sell her, reserve her for slaughter, or place her once more with the male, as the case may be.

If, on the other hand, we distinguish the unmistakable evidences of pregnancy, we must at once adopt all the precautions necessary to insure a healthy and profitable parturition. For this purpose very great attention should be paid to the quantity, quality, and peculiar nature of the food; which should neither be too spare or poor to afford sufficient nourishment for the proper generation of blood and milk, nor of such rich, heating, or stimulating properties as to hazard or encourage inflammatory tendencies. At no period during pregnancy (if ever) should damaged food be allowed. As the period of parturition approaches, generally for about a fortnight before the period when pregnancy will be completed, it will be desirable to lessen the quantity of food, or to have a care that it is *particularly simple, wholesome, and unstimulating. The state of the excrements should also be most attentively observed* (even every day during the last six weeks of pregnancy), and if the least appearance of irregularity be observable, particularly if they be *darker and more consistent*, we should have recourse to medicinal treatment as hereinafter described. The period at which the milk must no longer be drawn, varies according to the condition of the beast. In some cases, that is when the cow is very robust and well conditioned, we may continue to draw off the milk until within eighteen days of the estimated period of parturition. Very lean, weakly, or ill-conditioned cattle require to be left unmilked as long as nine weeks before delivery, and the length of time during which we should abstain from drawing the milk, will therefore range between this maximum and minimum according to circumstances. Pure pasture-feeding is the best, especially towards the close of the period of pregnancy.

60. Abortion.—No domestic animals perhaps require nearly so much or such constant and immediate care during pregnancy as cows, for none are so liable to incomplete, premature, unproductive, dangerous, or fatal deliveries. It might almost be said that irregularities in gestation are the more probable contingencies. Abortion, or, as it is technically called "*slinking*," abruptly terminates the pregnancy of cows under an endless variety of circumstances.

1st. It may be termed a species of epidemic disease spreading unaccountably amongst cattle, and continuing to affect them for years. In the majority of cases, however, it is rather of *accidental* or other *local* origin than attributable to *epidemy*. Nor even when introduced amongst particular herds by the admission of a strange cow previously subject to abortion, can it properly be termed epidemic, for even then the original cause may be traced to a particularity, not a generality.

2d. It may very properly be termed an endemic disease, affecting all the cattle in particular localities, and arising in such cases from the stimulating, acrid, or other mischievous nature of the food, from the peculiarity of the water habitually drunk by the cattle: such, for instance, as the presence of *chalybeate infusions;* from the peculiar nature of the atmosphere, &c.

3d. It may decidedly be looked upon as sympathetic, being induced even by the presence of a cow addicted to abortion, by the odors emanating from the discharges accompanying or following it, and many similar causes. *Wherefore every precaution should be taken to neutralize odors, to cleanse the spot whether within or out of the stable or shed, to remove all other cattle to a distance,* and to sink the abortive calf deep into the ground, and in some spot entirely unfrequented by the cattle, such as a wood or garden, as far from the range of the pastures and cow-houses as possible.

4th. There is no question but that abortion is hereditary in the few instances in which a cow, prone to *slinking*, has succeeded in rearing her calf. Wherefore we should strongly discourage the breeder *from ever rearing such calves (if female) for milch cows, and recommend him either to dispatch them for slaughter as calves, or to rear them for fatting only.*

Again: abortion may be considered hereditary in another respect, as dependent upon hereditary defects of constitution. Wherefore, a *cow of general unhealthy habit, and especially if unkindly and indicative of the presence of consumption, should never be appropriated to purposes of breeding.*

5th. Abortion may justly be held to be *periodical or rather atmospheric*, for it is very well ascertained that it becomes peculiarly prevalent during certain seasons under particular conditions of weather, &c.

6th, and last. Abortion is often, and perhaps most frequently denominated as accidental, and may be occasioned by any circumstances which tend to interfere with, or to interrupt, the regular operation of any particular function; for it must not be forgotten that the cow is of a peculiarly *hysterical temperament*, that is to say, that anything which affects the beast in ever so slight a degree, is likely, especially during pregnancy, to react upon the womb, and may sometimes affect a *future pregnancy* when the cow is not actually in calf at the time. Amongst these general accidental causes of abortion, we may number *fright* (from any cause); excess of food; over-stimulating food; plethoric condition arising out of food or confinement; want of fresh air and free scope; foul, close, unhealthy cow-houses; deficient or unwholesome food; *acute diseases in general, especially those of an inflammatory nature; sudden changes of pasture or stall food;* as also mechanical injuries, and intercourse with the male during pregnancy, &c.

61. Premonitory Signs of Abortion, Precautions against it, and General Treatment to follow it.—Cows which have once slinked a calf should be constantly watched, especially about the *twentieth week of pregnancy*, and from that time to a period varying from seven to four weeks before the estimated period of parturition. By observing this precaution, proper general treatment and proper remedies (for which see the article hereafter on the "Medicinal Treatment of Abortion as a Disease,") may be resorted to in time to arrest any untoward consequences.

The approach of abortion will be distinguishable in the gait and movements of the animal, which will have a tendency to *retain the same position* whether recumbent or erect. The movements of the calf in the womb will be less distinctly observable, and whereas under propitious circumstances these movements would be palpable externally to the eye, it will be necessary, on the near approach of slinking, to place the palm of the hand upon the right flank towards the hind quarters in order to distinguish them; the cow will feed but irregularly, evidently without relish, insufficiently, and without ruminating; the belly will droop, lose its sideway fulness and roundness, and become lank. This last will more especially be the case when the calf is dead, under which circumstance all motion will have ceased; the pace will be uncertain and *wavering;* the milk will fail; and, as the premature labor becomes imminent (and almost always unavoidable, but *invariably* so when there are symptoms of decomposition), sounds indicative of pain will be emitted; the respiration becomes catching, interrupted, irregular, and difficult; *a discharge either of a yellowish or darker and bloody hue exudes from the parts,* which if very offensive indicates the *decomposition* of the contents of the womb; and the pulse indicates considerable prostration (much resembling that attendant upon the low species of nervous fever), and is frequently very irregular; sometimes even barely perceptible.

The *homœopathic treatment* especially adapted to approaching abortion, will be stated in greater detail hereafter; but it may not be superfluous to state, that the homœopathist possesses a peculiar advantage in having direct specifics to employ against the disease, whereby, even in cases in which he might mistake the *precursory* for more *imminent* symptoms, his treatment will have been as apposite to *prevent,* as it would later be to *facilitate,* the deposition of the calf. In the earliest incipient symptoms of *predisposition* to *slinking,* alone, would his medicinal resources materially differ.

The after-treatment of cows which have slinked their calves should consist in the most expeditious removal of all offal, in treatment to promote the ejection of the after-birth (of which hereafter), and if necessary, of mechanical means for this purpose; in thoroughly cleansing the animal and its litter, and in allowing the free circulation of fresh air.

The only food allowable immediately *before* or *after* abortion, should consist of thin gruel, slightly warm.

The subsequent treatment of all cows which have prematurely deposited their calves (except in some rare cases in which *mechanical injuries* are purely the cause of the accident), may be summed up in four words,—*get rid of them!*

62. Parturition; Treatment Before, During, and After it.—The delivery of the calf either takes place in due and proper course, and without difficulty, or it is impeded, painful, slow, very difficult, or even totally arrested. In the former case little or no interference is requisite, other than to watch the progress of the labor, to be at hand at the moment of delivery, and to render every assistance to the cow and calf, as well as to see that the after-birth is properly ejected. If the latter is the case, however, and the labor has continued ineffectually for nine or ten hours, medicinal, and even mechanical, interference becomes necessary.

The removal of the after-birth will sometimes require medicinal, or even mechanical, interference, but this is rarely the case. As soon, therefore, as the labor is safely brought to an issue, we should content ourselves with placing the calf immediately within reach of the mother, and with seeing that a thin mash of tepid gruel is given to her. The suckling of the calf should be encouraged and facilitated (unless there be profuse and prolonged discharges of blood, when it must be withheld); and if the calf does not suck freely, we should resort to the expedient of drawing off the milk. But, under any circumstances, we should not remove the calf from the mother without sufficient reason. The process of licking, to which the cow submits its young, is alike advantageous to both. In the event of profuse and prolonged discharges of blood following delivery, we should have recourse to the medicinal treatment hereinafter recommended under the head of "Parturition."

Approaching parturition is indicated by the following symptoms, and, when these are present, the cow should be conveyed to a place where she will not be exposed either to the inclemency of the weather, or to accidental intrusion or interference, quiet being essential to her. Cold water should be sedulously kept out of her reach, because, if at hand the febrile action, which in all cases, more or less, accompanies calving, will induce an inclination to drink it, and the pains may thereby be so far modified as to render them inadequate to the expulsion of the calf. We may allow harmless warm drinks, such as unstimulating mashes, gruel, &c.

The Premonitory Symptoms are generally these: great uneasiness, gradually increasing, the cow constantly changing position, as, for instance, laying down as soon as it has got up, and *vice versâ;* the discharge from the passage, such as has already been described under the head of "Abortion;" the sudden distension of the udder,—the appearance of the belly being such as has already been described; a peculiar slow, periodical moan, which is only heard on the approach of or during labor; the swelling of the parts, and afterwards a peculiar muscular action of a forcing description, which regularly accompanies the recurrence of the pains. As labor approaches or begins, the pains become more regular, evidently more violent and quicker in succession, and the pulse and respiration quicker. During the whole of this time we should abstain from meddling with the beast; but when, from the presence of certain discharges, or from the length of time since the commencement of the labor, we have reason to believe that the delivery should be at hand, we should proceed to examine the cow, for the purpose of ascertaining the position and advancement of the calf, and whether or not there be any hinderance in the construction of the cow which will impede its progress.

The position or formation of the calf is either natural or unnatural.

1st. In its natural position, it should be extended on its stomach, with the back upwards (relatively to an erect position of the cow), and it should advance in the passage by the fore legs projecting forward, the head being also stretched forward, so that the nose rests upon and between the knees, but not so as to project below them.

If there be nothing in respect of the conformation of the cow to interfere with ready delivery, and if the parts are properly dilated, whilst the labor-pains (as indicated by the excessive pressure and resistance offered to the hand) are strong enough to expel the calf, it is better to let nature do its work.

2d. The position of the calf being unnatural consists in its being different from that above described.

It is sometimes reverted sideways;

Sometimes on its back, with the belly turned upwards, relatively to the erect position of the cow;

Sometimes with the nose so sunk as to offer an impediment to its passing, &c.

In the majority of these cases, medicine will not suffice without the application of mechanical resources; and these mechanical resources sometimes extend to the partition of the calf, for the purpose of removing it by pieces, which is always justifiable when the calf is dead. Of the medicinal accessories hereafter (*see* "Parturition").

3d. The formation of the calf may be such as to preclude the possibility of delivery, when surgical resources can alone be of any avail. It has even been thought necessary to open the side of the cow for the extraction of the calf: the more common method is to extract the calf by pieces.

4th. There may be impediments arising out of the construction, malformation, or accidental contraction, &c., of the parts in the mother. In the majority of these cases mechanical means become requisite. Of the medicinal means hereafter (*see* "Parturition").

5th. If *the labor-pains become weakened or suspended*, the treatment hereinafter directed, under the head of "Parturition," must be resorted to. It is obvious to every one who pays the slightest attention to these matters, that both the cow and calf are prejudiced by the undue extension of the period of labor; and consequently anything which tends to protract the expulsion of the calf should be obviated as soon as possible.

6th. If *the labor-pains continue unabated, and strong enough to expel the calf*, during more than from ten to twelve hours, we may infer that there is some mechanical obstruction, either in the cow or calf, and must proceed accordingly, as before directed.

63. Mechanical Means for Assisting the Delivery.—The hand must be oiled and carefully inserted, so as to ascertain the position of the calf; and if the general position be found as it should be, with merely a slight depression of the head, it may be found sufficient to raise the head, and place the head and fore feet so that all difficulty is removed. In most cases it becomes necessary to attach a cord to the fore legs and jaw, wherewith to draw the calf forward simultaneously with the propulsion given by the labor-pains. The same means are often found sufficient when the difficulty arises from malformation in the mother. When the position of the calf is otherwise unnatural, we must endeavor to alter the position, agreeably to the description of natural position given above. The more complicated cases, involving serious operations, are beyond our province.

64. The Earliest Treatment of Calves.—Apart from the more special directions for treatment, which will form part of the article on "Parturition" hereafter, it may be more properly mentioned in this place: *First*, that the navel-string should be examined, and proper bandages applied if the hemorrhage continue. *Secondly*, that, above all, the calf should (unless there be physical impediments) be allowed access to the *first milk*, than which nothing will more surely modify the first irregularities of the digestive functions. *Thirdly*, that the treatment of the calf should be incidental to that of the mother, for whatever will tend to injure the mother, during the first few weeks after delivery in particular, will almost inevitably recoil upon the calf. Every precaution should, therefore, be taken to promote the secretion of *good* and *abundant* milk; all regulations with respect to *cleanliness*, *air*, and the like, should be strictly observed; and the first indications of derangement in the cow should be speedily obviated by appropriate treatment. *Fourthly*, that in the generalities the same precautions are observable with respect to the calf individually. *Fifthly*, that as soon as the calf has sufficient strength to follow the mother about in the pasture, and power as well as disposition to gambol, it will be far more consistent with common sense to allow it to remain with the mother, and freely to seek the udder or to ramble unrestrained, than to keep it pent up in a close and unhealthy cow-house. It is a great mistake to suppose that the unlimited access of the calf to the udder either deteriorates or lessens the supply of milk; the fact is quite the contrary, if the food be of a quality and abundance consistent with the requirements of an animal giving suck.

65. The Period of Weaning varies so much, according to the convenience of the owner, and is so frequently set aside altogether by the slaughter of the calf, that it were difficult to set any precise limit for the guidance of the reader in this respect. It is clear, however, that, if it be intended to *rear* the calf, much must depend *upon its strength and capability of subsisting* independently of the mother. The advancement of the teeth is an important point whereby to judge of this; and it is not very difficult to discern whether the calf readily and easily partakes of general food. If it be intended to breed again from the mother, it is natural enough that she should be separated from the calf, already sufficiently advanced to do without her support.

66. Feeding of the Ox, Cow, &c.—The ox and cow, the latter especially, are more adapted by construction, constitution, habits of motion, and the absence of any express requirement for fleetness, to pasture feeding only, and green food constitutes the staple article throughout the greater part of the year, but especially when there is sufficient grass to sustain the cattle. In the absence of a sufficiency of green food for browsing, the best method of feeding for the cow is that of the open straw-yard, where shelter is at hand in case of need. There the ox and cow will alike feed upon whatever chaff, grass, clover, or other hay is placed at its disposal, as also upon wheat, oats, barley, and pea straw. It is customary to have square racks standing here and there in the straw-yard, whence the cattle may feed at pleasure. For winter feeding, we have also mangel-wurzel, beets where they are sufficiently plentiful, turnips, carrots, potatoes, horse-chestnuts (which are very much used in many parts of the Continent, and which are sufficiently plentiful in this country, but are not used), acorns (which are also held of great value in some localities), grains, oil-cake, waste meals, &c. In fact, it may be said that these cattle may be fed upon nearly the same kinds of food as already described under the head of "The Horse" (with the exception of entire grain), and that they are also calculated, beneficially, to consume many articles of food which would be withheld from the horse. For such cattle we have also the resource of mashes of every variety.

As respects what is said of meals, grains, oil-cake, and stimulating mashes, and other kinds of high and rich food, it must be understood to apply rather to the feeding of oxen for fattening, or to stall-feeding properly so called, than to that of the cow, which for the reasons already stated under the head of "Breeding," should not be allowed very high or stimulating food. With respect to turnips, potatoes, and the like succulent kinds of food, they should be allowed in limited quantities only; because, as has been stated previously, ruminating cattle are apt to gorge themselves to such a degree as to annul the operation of the organ which distinctly characterizes their habit of feeding, when serious consequences, such as hoove, often ensue.

With reference to the stall-feeding of cattle which are reserved for slaughter, as much depends upon feeding *judiciously* as upon the choice of rich and generous food; as, for instance, it is very essential to feed frequently, sparingly, and at regular intervals. The process of digestion will then be assisted, promoted, and regulated, and the food will really produce adequate effects, and repay the feeder, whereas the best food, injudiciously tendered, will serve but little purpose, as far as the perfection of fat cattle is concerned.

In no case, moreover, should *lean cattle*, recently brought from impoverished or spare pasture, be gorged with *rich fatty substances;* they should even be sparingly indulged in the richer *pasture* of their new locality, but should be gradually accustomed to both, with the intervention of dry food, such as *grass*-hay and straw.

If the cattle are subsequently to be *stall-fed*, the better method would be, perhaps, to feed them with hay and straw in the shape of chaff.

With respect to the particular choice of food, from the general repertory adapted to cattle, breeders do not appear to follow any distinct or consistent rule; and if they adopt this or that species of food in preference to another, it is *rather on account of the manure yielded* by it than of the effect which it produces upon the cattle. Hence the frequent and very general use of oil-cake, turnips, and grains in stall feeding. Nor is this so unreasonable as the casual reader may imagine, for the *real economy* of *fat stock* consists in the improvement of the soil for the more profitable production of *grain*. Fatted cattle can by no means be esteemed so profitable in themselves as many persons appear to imagine.

67. Of Green or Fresh Food.—Under this head we may include *pasture*, of which much has already been said, clover, sainfoin, tares, &c.

1. *Pasture.*—Where there is a running stream of rapid current, and the adjacent levels are well drained, there is no doubt but that the pasture of marsh lands is highly advantageous for the feeding of cattle generally, but care should be taken that *rankness*, occasioned by a constant swampiness of the subsoil (whence an inferior admixture of grasses and other plants will spring), be not mistaken for *genuine luxuriance*, because in such cases marshy lands are perhaps the least desirable of all situations for pasture. When really well drained, &c., they constitute equally fine grazing for the ox or the milch cow, *hitherto accustomed to rich pasture.*

Uplands and down turf are, perhaps, the best adapted for the grazing (at all events for the *preparatory* grazing) of all hardy mountain cattle, such as the Welsh and Scotch.

Table meadow-land, elevated above the level of waters, with a gentle slope towards the southwest, and partaking neither of the marsh nor of the upland, is perhaps the best adapted to all general purposes of grazing, as well as of haying. Grazing land of this kind should, if possible, have only trees enough for shelter, without such a prevalence of large spreading trees as to deteriorate the grass, or occupy much space. Trees are advantageous on the outskirts of a grazing meadow, to the north, northeast, and northwest, but are very prejudicial and wasteful when interspersed over the whole of the land. Hence the disadvantage of the so-called park lands, which are neither parks nor pastures, but in which the owners have incongruously sought to appropriate to themselves the two in one.

2. *Clover* is a most beneficial kind of green food, if allowed in moderation, and only to cattle in such condition that they can bear it. All cattle will gorge themselves to excess if they be suffered to have unlimited access to it.

3. *Sainfoin and Tares* also constitute very valuable green fodder, and, though not quite so mischievous, in excess, as clover, should be measured out by the feeder, and allowed only in limited quantities.

68. Construction and Management of Cow-Houses and Buildings adapted for Oxen.—In the first place, the majority of buildings of this kind are erected with a false regard to economy, the first cost being too much considered. They are either mere sheds, without the regular admission of light, air, &c., and without proper drainage (one of the most important of considerations respecting the dwelling-places of animals, as well as of human beings); in these instances, also, they are low-pitched, narrow, and exposed to baneful draughts from certain quarters of the wind, and frequently *ill covered* (in which they wholly miss their object), or they are squat, low, solid buildings, with little better than six or seven feet of depth between the floors, that the upper portions may be appropriated to stowage of various kinds, and in very few cases are they *detached*, so as to admit of thorough purification, or to arrest the malignancy of any infectious disease which rages amongst the cattle.

Besides these and other glaring defects of construction, we are almost invariably called upon to censure one very popular but very mischievous species of mismanagement, which consists in the accumulation of manure and waste matters in progress of decomposition constantly beneath the cattle. With stall-fed cattle, in particular, this is the case, and is attributable to the erroneous idea that the manure is better preserved, and rendered more valuable by such accumulation, whereas the case is rather the other way.

The evils of this method as regards the cattle are many:

1. Drainage is rendered quite impossible, all the waste moisture being absorbed by the trampled straw, &c.

2. The generation of noxious vapors is constantly sustained and encouraged.

3. The food is often deteriorated by exhalations. There are several remarkable experiments recorded in illustration of this fact.

4. A species of humidity is maintained, which is obviously injurious to animal life.

5. The manure is rendered less fertilizing, by being prevented from absorbing that which enhances its properties in the atmosphere.

For stall-feeding, as for cattle generally, it is even questionable whether the best contrivance does not consist in a well-sheltered quadrangular straw-yard, surrounded on all sides by sheds, open on the side facing the interior of the quadrangle, well roofed, and well protected from the outside, the whole being drained from beneath the surface, in such a manner as to convey all waste waters beyond the pale of the yard. Along the whole length of the back of these sheds should extend the troughs or mangers, whence the stall food is to be derived by the cattle, the green food and hay being placed here and there about the area in racks, and an abundance of troughs being fixed at divers places, wherein to keep good clean and soft water for the cattle to drink. In this case, the greatest objections to the accumulation of manure will be obviated, and hence much time and trouble saved; whereas, for cases of sickness or breeding, when the weather is very severe, separate buildings might be erected wherein to house the sick cattle or cows calving for the time.

OF THE HORNS AND TEETH OF CATTLE.

69. (*a.*) **The Horns; their Adaptations; and the Indications as to Age, Health, &c., to be derived from them.**—*Adaptations of the Horns of Cattle:* These are highly useful in various manufacturing processes, according to the portion used, their construction being so various as to be productive of size for purposes of cloth-making, grease for the soap-boiler, and of horny substances, part of which, as is well known, are used for combs, the handles of implements, and as a substitute for glass, being less brittle, and consequently better adapted for rough use, and sufficiently transparent for many purposes.

The Horns as an Index of Breed, &c.—As we have already stated, the clearest distinction between the different breeds of cattle is founded upon the difference in the length, construction, &c., of the horns; and the advocates of any of the specific varieties of cattle consequently contend warmly in attaching a preference to a particular description of horn. The *short* and *middle* horns have of late years become the most popular; but those who hold *hornless* or *polled cattle* in estimation, attribute a preference to the absence of this index. It should not be omitted here, as a curious and interesting distinction, that in respect of sex, the horns of cattle, such as the ox, bull, and cow, seem to vary subject to rules directly contrary, or at least very inapposite to those on which the antlers of the stag depend.

The Horns as an Index of Health.—The peculiar construction of the horn, intersected or perforated in every direction by the passage of innumerable small vessels, as well as the exceeding thinness of the external covering which surrounds the roots, renders it a most distinct index of the state of the circulation, and consequently of the condition of organs which are most immediately and distinctly affected by the condition of the vascular apparatus. If there be any undue state of heat in the blood, it will immediately be observable by touching the root of the horns, where, as already described, the external covering is so thin, as to place us almost in contact with the vessels themselves; whereas the vessels are so abundant, and in so important a position in relation to the superior organs as to convey the most positive idea of constitutional disturbance when present. In the undue development of heat, therefore, we distinguish the presence of inflammatory action.

The Horns as an Index of Age.—In this respect the horns may sometimes serve us; but as we shall presently explain in speaking of the *teeth*, the latter are, in reality, the only indices which are always to be depended upon. The horns of the cow are certainly of more certain instruction than those of the ox; and those of the bull are the most likely of all to mislead us. But the traces of age, even in the cow, are often very indistinct, and too indefinite to induce a sure conclusion; whereas in the ox we cannot hope for any trace of age between the completion of the first and fifth years, and in the bull but a very imperfect indication even of the later period. In the heifer or cow we may (as in all cattle under a year old) distinguish the age until the completion of the first year, in the nature of the external covering of the horn, which will not be the external bright, smooth surface of the horn itself, but a species of scaling, desquamating skin, which seems to have been borne outwards in the growth of the horn, and which is dull, rough, and irregular. But in the ox, heifer, or cow, we observe a new indication at the completion of the *third* year; namely, the *rings*, which constitute the trace of age from that time forward. But in this respect, again, we may be misled by the fact, that a period of pregnancy, commenced at the termination of the *second* year, or sooner, will promote the development of the first of these rings by that time; and it is well known that these rings cease to be perfectly and distinctly developed at the sixth year; besides which, they are often artificially imitated by designing persons, and afford great facilities for counterfeit.

70. The Teeth of Cattle as to Number, Construction, and the Indication of Age.—The teeth of cattle (as of the horse) constitute a much more certain indication of age than the horns. We may begin by stating that the permanent and perfect set comprises—

1. *Cutting teeth* or *incisors*, which are only situated in the lower jaw, and which operate on an upper gum of peculiar construction, and which, moreover, are more properly described as 2 central and 3 on each side, ...	8
2. *Grinders* or *molar teeth*, 6 on each side above (12), and the like number below (12), ...	24
Total number, ...	32

It should not be omitted, however, that horned cattle, like horses, have two distinct sets of teeth, differing in the two species rather in relative numbers, and in the periods of change and maturity, than in the process which attends the change. These two distinct sets are divided, as has before been stated (see "Teeth of the Horse") into *temporary* or *milk teeth* and *permanent teeth.*

The temporary or milk teeth of cattle are 28 in number, namely:

1. *Cutting teeth* or *incisors*, which are situated only in the lower jaw and operate upon a peculiar formation of the gum above, and which are properly divided into 2 central and 3 on each side, .	8
2. *Grinders* or *molar teeth*, 5 on each side above (10), and the like number below (10), ...	20
Total number, ...	28

These *temporary* or *milk teeth* are developed and absorbed, to be replaced by the subsequent and permanent set, according to the order hereinafter stated.

Development and Progress of the Cutting Teeth.—If the period of pregnancy has been fully run, and the term of parasitic existence has fairly expired at the birth of the calf, it will generally be born either with the two middle cutting teeth actually through the gum, or so far advanced as to be very soon pierced, whilst it will be furnished, in most case, with eight, and in some instances with twelve grinders.*

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* That is, 2 or 3 on each side above (4 or 6), and 2 or 3 on each side below (4 or 6), in which case the mouth of the calf at birth, or very shortly afterwards, will display the following array of teeth:

If two grinders have appeared in each jaw above and below—

1. *Incisors*--the two central teeth in front of the lower jaw, . . .	2
2. *Grinders*, or *molars*, 2 on each side above (4), and the like number below (4), ...	8
Total number, ...	10

In other instances, in which the calf is premature, or for various reasons,—such as constitutional debility in the mother, deficient and inadequate food, and the like,—it will occasionally occur that these teeth do not even protrude at the birth. We will, however, assume the calf to be fully matured previous to delivery, more especially as there will be little difference after the completion of the first year of independent existence.

At from ten to sixteen days old, two more *cutting teeth* will make their appearance, one on each side of the two first (making four altogether);* in the course of nine days more we may expect a third pair, viz., one on each side (making six altogether); before the thirty-fifth day after birth, or, as it is said, within the first month, a fourth and last pair will protrude, viz., one on each side as before (*making the complete set of temporary incisors*, eight in number).

These teeth begin by being covered over the top, or acting surface, with a species of bright enamel, which gradually wears away, and betrays the coarser grain of the tooth beneath it. The front edges of the teeth, however, retain their sharp and positive structure much longer than the edges which touch upon the tongue, and upon which the heaviest work rests. About the time that the last pair of cutting teeth begin to show themselves, namely, at a month old, the first two will already begin to show the wear; another month will include the second pair in the same category; a third month the third pair (about which time, also, we shall descry the gradual wear of the outer edges of the first teeth); towards the completion of the fourth month, the entire set will have become worn. We shall also be enabled to detect the growth of the animal from the changes in the general appearance of the teeth, which progressively take place, as well as from the *mark* which, from being rectilinear (first in the shape of a mere broad stroke on the crown of the teeth, parallel with the course of the circuit of the gums), whilst the crowns of the teeth are level, will become dilated into the shape of a triangle, as the crown becomes obliquely inclined inwards by the greater wear to which the inner edge of the teeth is exposed; besides which, as the *milk teeth* begin to be absorbed in the generation of *permanent teeth*, interstices will become developed between them. All

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If *three grinders have appeared, as above stated*—

1. *Incisors*, as above, ...	2
2. *Grinders*, or *molars*, 3 on each side above (6), and the like number below (6), ...	12
Total number, ...	14

these features are developed in the consecutive teeth, *according to the order of succession in their appearance;* and we may date the triangular appearance of the mark above described, and the diminution of size in the two central incisors, at or about the completion of the *fourth month.* Between that period and the expiration of the first year, the same change will have become manifested in the two adjacent incisors (including four altogether); whereas, in the meanwhile, a *fourth* and *fifth* grinder will have perforated the gum, whilst, at the same time, the first is in course of being changed. In the course of three months longer, six of the cutting teeth will have become so modified, and a further period of three months (viz., that of eighteen months old) will involve the entire set in the change of appearance, *the comparative degree of wear being still in accordance with the order of succession.*

A second mark, in the shape of a thin line, will now be developed, encompassing the former mark. The interstices, moreover, between the teeth, especially the front teeth, will become gradually greater as the teeth diminish in size (being already as wide as the teeth themselves), until, by the completion of the second year, we may descry the appearance of the *first two permanent* teeth as substitutes in the centre of the set of incisors, whilst the second of the grinders is being changed. The change of the first two *incisors* will quickly be followed by the change of a second pair, so that, taking into consideration the progressive change of the third of the grinders, the beast at three years old would be distinguishable by the following features respecting the teeth. There would be—

	M. T.	P. T.
1. *Cutting teeth*, or *incisors—milk teeth*, two on each side, much attenuated, ...	4	0
Cutting teeth, or *incisors—permanent teeth*, two central, and the two next adjacent on either side, ...	0	4
2. *Grinders*, or *molars—milk teeth*, two on each side above (4), and the like number below (4), viz., the fourth and fifth, ...	8	0
Grinders, or *molars—permanent teeth*, three on each side above (6), and the like number below (6), viz., the first, second, and third, ...	0	12
Grinders, or *molars—permanent teeth wanting*, one on each side above (2), and the like number below (2), viz., the sixth, ...	0	0
Comparative total number (making an aggregate of 28 teeth),	12	16

The course of another year will have slowly removed another pair of *temporary cutting teeth*, whilst, at the same time, the *fourth* grinder will have been cast, and will have been replaced; and by the completion of a fifth year we shall have a complete set of incisors, differing—(1) in the degree of development according to order of succession; (2) in the degree of wear similarly; (3) in the modification of the mark, as above described; whilst, at the same time, the fifth and *last* of the *temporary* grinders will have been supplanted by a permanent tooth.

An additional and sixth year will be chiefly remarkable for the final completion of the *entire set of permanent teeth*, in the appearance of the *sixth molar*, which appears *once for all* (being never cast), and for the full growth of all the permanent *incisors*, the four central ones of which have already begun to betray wear in the obtuseness of the edges, and in the modifications of the *mark*. After this time the calculation of age in cattle becomes half problematical; and the only way to form any approximate idea of it, is to consider the distinct change taking place in the development of the *mark*, the renewal and extension of *interstices*, &c., as involving *one additional pair of the incisors in the course of every additional year*. But it may also be added, that after the seventh year the question of age ceases to be of so much importance as to exercise material influence on the value of the animal.

71. The Hides and Gluten, and other Products of Cattle.—In conformity with our purpose of touching upon all the points of commercial importance in respect of cattle, we should casually allude to the hide, gluten, &c. It is beyond the pale of this work to enter into the consideration of the value or profitable application of these products for purposes of manufacture, but it may be useful simply to mention them, in order that the breeder may not lose sight of them in the treatment of cattle. There are no especial rules relating to the treatment of cattle as regards the hide, unless it be generally that everything which tends to injure the skin, to destroy its regular surface, &c., will detract from its value; and everything which tends to preserve a sound, even, and unbroken surface, &c., will comparatively enhance its value. As disease of any kind is very quickly betrayed by the condition of the skin, it is obvious that even its texture is liable to be affected by *constitutional derangement, and it is obvious* enough that whatever is conducive to the general health of the animal will be beneficial to the skin, as well as to every other organ, structural part, or function.

SECTION III.

THE SHEEP.

72. General Remarks.—The usefulness of instructions respecting the various kinds of domestic animals depends upon the degree of practical information which they convey, as regards the uses and sources of profit which are to be derived from the subject of such a treatise. It is our object to fulfil this design to our utmost. Wherefore, in treating of the SHEEP, which yields so large a proportion of the sustenance and comfort of civilized life, and of wealth to the breeder, it will not be superfluous to call the attention of the reader briefly to the chief sources of its productiveness. They may be divided as follows:

1. The flesh, which ranks amongst the most nourishing and most wholesome of animal substances.
2. The fat, which is variously used for manufacturing purposes.
3. The wool, which supplies the material for the greater part of our woollen draperies.
4. The skin, which, though of less importance than those of the ox, cow, &c., and horse, is nevertheless used for very many purposes in manufacture.
5. The milk, which was formerly in much request, but has latterly been abandoned for the sake of enhancing the foregoing and more essential productions.

For agricultural purposes, the sheep also possesses another transcendent merit, that of improving pasture and of contributing to enrich the soil with manure. The advantage of folding sheep upon arable land, to prepare it for the white crop, is well known, and needs no further remark. We will therefore proceed, first, to consider, briefly, the various breeds of sheep, and their comparative productive merits; secondly, the wool and its peculiarities, and how the last may be modified; thirdly, the breeding, rearing, age, sex, shearing, general management, &c., of sheep; and fourthly, the kind of feeding which enhances any of the productive merits above named.

73. A Glance at the Various Breeds of Sheep, and their Productive Merits.—The universal adoption and usefulness of the sheep as regards the necessities of mankind, cannot be better exemplified than by a glance at the universality of its location. Next to mankind there is no living thing which is so universally domesticated, and so abundantly cultivated as the sheep, or which has continued to engross the attention alike of the wandering hordes of semi-barbarous people, of every nationality, and of the most refined of civilized communities, as the sheep has done. The dog may, perhaps, be said to be as universally the companion, assistant, and favorite of man, but dogs are certainly not reared and nurtured in such numbers.

Europe, Asia, Africa, and America, all number their various breeds of sheep, each being more or less adapted to climate, circumstances, and locality. In Europe we number about twenty-five varieties, which are again subdivided into a multiplicity of local breeds. Those in the eastern and southern provinces of Russia (which also include some of the Asiatic breeds) are famous for the delicate texture of the wool, which they yield abundantly. The Spanish sheep, which are *short-woolled sheep*, particularly those known by the distinctive name of Merinos, are unrivalled for the exquisite fineness, thickness, closeness, and abundance of their wool. The sheep of France include a great number of varieties, of which those of the northwest, towards the Flemish frontiers and the English coast, yield the largest quantity and the best quality of meat and wool, but they are by no means of a very superior class. The Saxon sheep, also short-woolled, which are Spanish sheep transplanted into Saxony, and which have served to improve the stock of the neighboring countries, especially to the extreme southeast of Germany, rank first in the world for the quality and abundance of their wool.

To these last may be added in succession, as to the comparative value of the wool (amongst the European breeds), those of Austria and its dependencies, of Wallachia and the adjacent provinces. The English breeds, such as they are actually, we shall presently have occasion to notice more at large, and shall therefore withhold any further remark in this place. Amongst the Asiatic breeds we notice more particularly the sheep of the Deccan, remarkable for good qualities of flesh, as well as for fineness of wool; those of Persia generally, and of Kirman in particular, which yield a wool of peculiarly fine and delicate fibre; and those of Thibet, which possess no mean qualifications in respect of flesh, and the wool of which, like that of the Persian breeds, is of particularly delicate fibre.

Amongst those of the British Colonies, exclusively of a few West Indian sheep, and exclusive of those of Canada, we have those of Australia, New South Wales, Van Diemen's Land, &c., which, although they have not, until very recently, sent home to the mother country any wools of very high price, have been progressively improving as the colonies have been developed, and begin to constitute a very important feature in British commerce.

Besides the sheep of Canada, North America produces a few varieties of sheep, partly indigenous, and partly transplanted from England and elsewhere, whereby the aboriginal breed has been much improved. There are many districts in which the sheep yield a fair average quality and quantity both of flesh and wool. The South American sheep, which are chiefly attributable to Spain, have no doubt been equal to the merit of their extraction; but whereas they still retain some of the characteristics of the peculiarly fine wool of the migratory Spanish sheep, they have seriously fallen off from the aboriginal excellencies of the breed.

The African sheep are chiefly of the fat-tailed variety. There are, also, other varieties, partly due to European colonists, and partly to different localities. For the quality of flesh some natural historians praise the Barbary, Morocco, and Tunis sheep; some of which also are not without merits in respect of the fleece. The most interesting, perhaps, to an Englishman, are those of the Cape of Good Hope, which by various admixtures have been brought to considerable perfection.

Of British Breeds of Sheep.—Of the sheep which are generally bred in this country, we may divide the great majority into two classes, which distinguish them from those already described above as *short-woolled sheep* (under the heads of those of Spain and Saxony). British sheep generally are comprised under the heads of sheep with wool of medium length (*middle-woolled sheep*), and sheep with long wool (*long-woolled sheep*), some of which are polled sheep, and some horned.

Amongst the former (the polled sheep) with *medium wool* we may number the Herefordshire, Cheviot, Welsh, and South Down, and amongst the latter (the horned sheep), with wool of the same character, we may include the Norfolk, the Dorsetshire, some of the Welsh breeds, the Heath sheep, &c.

The Middle Wools.—This great class of sheep in this country belong chiefly:

1. To the mountains of Wales and Scotland.
2. To the midland, eastern, southern, and southwestern counties of England.

Saving the exception of particular breeds of Lincoln and Leicester, or even Romney sheep (which belong to the long-woolled variety) the middle-wools may be considered the favorites of the British agriculturist. In such counties as Sussex, Hampshire, Somersetshire, Devonshire, Wilts, Hereford, Worcester, Cheshire, Kent, and Surrey, we find them universally prevailing. It is amongst the middle-woolled sheep that we have to class one of the most choice breeds of this country, viz., the South Downs, well known for the superior quality of their flesh, and found to yield from certain soils and with ample ranging scope, a by no means inferior quality of wool. These South Down sheep, which are now very generally bred throughout Great Britain, have one great merit which should strongly recommend them to the farmer, namely, that they are more healthy and hardy and less subject to the ordinary diseases and casualties of sheep, than almost any other breed. Herefordshire is noted for one remarkable breed of sheep in particular, known by the name of *Ryelands*, which although small, are unsurpassed in this country for the quality of wool. Amongst the Welsh breeds, that of Glamorganshire holds a high rank for merits at every point; we have also the Anglesey sheep, whose double merit of fattening easily and yielding very fine wool, has strongly recommended them to the attention of the breeder. Whilst in the north of England (in Cumberland), we find a breed known by the name of Hardwicks, which possesses great merit, both in respect of fattening properties, wool, and other features of some importance; whereas the most eligible breed of all, that which belongs to the Cheviot hills, and has obtained the distinctive name of the locality, has successfully maintained its ascendency over the heath sheep or *black-faced breed*, as it is called by some. The Cheviot sheep possesses as much as or more than any other breed of British sheep, the three most essential qualities:

1. That of making flesh kindly, and consequently being one of the most profitable feeders.
2. That of being thoroughly hardy, and less affected by the accidents of season, &c., than any other yet brought into the market.
3. Of yielding a particularly fine quality of wool.

Of the Scotch breeds, the Shetland sheep, perhaps, deserve the palm. Their wool is of a particularly soft texture, and remarkably white.

The Long Wools.—In alluding to the different varieties of the long-woolled sheep, we will rather follow uniformly a direction northward, from the first district in which they are, as it were, indigenous, than a classification as to respective merits, more especially because these distinctions, in respect of a breed which does not vary in essential particulars of productiveness, are somewhat arbitrary, and because they are rather governed by the circumstances, more or less advantageous, under which they are reared, and in which they are sustained, than by natural superiority. To begin, therefore. in the extreme southeast, we first meet with a very valuable variety of the long-woolled sheep, in various portions of Kent. These have been peculiar to Romney Marsh from a very remote period; and although the wool is not fine, it is generally very sound and serviceable, most abundant, and very long. These sheep have also the merit of being exceedingly good and economical feeders; they fatten very easily, and require but a very small share of nursing and attention. They have been improved by some admixture of the Leicester and Lincoln breeds. We again meet with the long-woolled sheep in the deep lands, and in the luxuriant valleys of Devon, Dorset, and Somerset. In the rich lands of Worcestershire and Gloucestershire we meet with them once more, in the few remaining flocks of pure Cotswold blood, and in the mingled breeds descended from them. Their peculiar merit consists in the quality and abundance of their wool; they are certainly inferior to the majority of the long-wools, and certainly to the Romney and Leicester breeds in respect of flesh-making. The full credit of the long-wools is centred in those of the midland counties, and of the Leicester and Lincolnshire breeds, the former of which excels for the quality of flesh, and the kindliness of feeding, whilst the latter is the largest producer of wool of any of the British breeds, but is perhaps the most ungainly feeder of all the long-wools. These differential merits are encouraged, to the depreciation of other qualities in each respectively, by the system of husbandry to which they are respectively subjected.

74. The Wool and its Peculiarities, and how the Latter may become Modified.—In confining ourselves to the consideration of wool, in speaking of the natural covering of the sheep, it should not be understood, that it is exclusively provided with wool, but merely that the wool is the more valuable product. There are, more or less, admixtures of *hair* in the fleece, as there are, more or less, admixtures of wool in the coats of animals whose covering consists chiefly of hair. It is, however, the object of the breeder to free the covering of the sheep as much as possible from the presence of hair; and this, as we shall presently show, is to be effected by the judicious treatment and constant attention of the breeder.

The wool is, in most cases, more or less improved or deteriorated by the abundance or scantiness of an oily alkaline substance, called the *yolk*, which evidently administers to the richness of the covering; and the yolk is always encouraged by the degree of shelter and warmth which the sheep enjoy, and by the quality of the food upon which they are sustained. Where the breeding has been carefully and judiciously conducted, and proper attention has been paid to the progress of the animal, and to its protection from sudden changes of temperature, from severe inclemencies of weather, &c.; and when the situation and quality of the grazing grounds, and the quality of the artificial food, have been as well adapted as possible to the *habits*, *requirements*, and *origin* of the sheep, the defects and irregularities of the wool will be gradually decreased. Wherefore, breeds of sheep which are indigenous to elevated localities, and to whom mountains perhaps are natural, should be fed upon upland soils, whilst the heavy long-woolled sheep, which has invariably been found in rich and irrigated plains, will thrive in low, marshy localities. Shelter from excess of heat, as well as of cold, is important, as the wool is as likely to be rendered coarse by excessive relaxation, and by the over-expansion of the pores, as to become wiry and harsh when exposed too inconsiderately to the utmost severity of a bleak winter. Nothing tends so much to render the wool *irregular*, the coarse being mingled with the fine, and the fibre being of various thicknesses, as exposure to great and sudden variations of temperature; whilst deficiency or unwholesomeness of food will quickly affect the color, *elasticity and tenacity, which are so important*, and the wool will lose its whiteness and with it other properties, whilst at the same time it will become *patchy*, and often also insufficiently thickened about the roots. The *softness* which we look for in wool will be affected by both contingencies, but by exposure in particular; whilst the intervention of a hairy admixture in the fleece, which should be so studiously avoided, will in general follow all irregularities in general treatment.

The hair is distinguishable from the wool by being more regularly shed, and generally more than once in the course of the year, and that also more progressively, whereas the wool is cast in patches, if at all, and sometimes over the greater portion of the fleece at the same time. But it may also be stated, that the springiness of the fleece is comparative evidence of the absence of hair, which, from the absence of the systematic coil which conveys this elasticity, is devoid of the peculiar *buoyancy* which is conveyed to the touch, upon pressure, by pure wool, and which is due to the spiral curvature of the fibre.

With respect to the shedding of the wool, it is well known that the practice of *shearing* has obviated or forestalled this process.

75. The Breeding, Rearing, Shearing, and General Management, &c., of Sheep.—As with other domestic animals, the first great precaution which must be observed by the breeder is to select judiciously from his own stock, or to introduce new blood, in order that the productive qualities or excellencies of both male and female be as distinctly developed as possible; and in order that both be equally adapted to the climate, situation, and produce of the soil upon which the offspring is to be reared. In fact, it requires as much care, and as much attentive consideration of every peculiarity in the locality and in the animals, to breed successfully, as to rear successfully. Wherefore, at the earliest period at which the excellencies or defects of the lambs are observable, it were desirable to remove such as fall short of the characteristic good points of the flock in general, and to set them at once aside for fattening and for slaughter; so that they may not subsequently transmit their defects to a new generation, and thus gradually destroy the value of the breed. Besides these general regulations, another holds good of sheep, as well as of all domestic animals, and one, too, which it is the more important to impress upon the reader, that it is rendered imperative by the very care which the breeder takes to preserve the utmost integrity of his stock. It is ever desirable to select the ram as frequently as possible from other families and other localities, with proper precaution, however, that the interloper have as closely as possible the characteristic habits, requirements, &c., of the flock to which he is introduced.

The Ewe: her Pregnancy, Yeaning, &c.—In respect of the period of delivery it is important to consider the probable advancement of the season, in accordance also with the average condition of climate and vegetation at such periods. If the locality be backward, cold, bleak, exposed, and elevated, the more desirable period of delivery will be later than in warm, forward, and sheltered valleys or plains. The most general period of lambing in this country extends from the first week in March to the close of April; the March lambing being the more prevalent. The period should not be deferred until a season when there will, probably, be considerable heat, nor should the lambs be the least exposed at an earlier period, if the weather should happen to become unfavorable, and especially if there be a prevalence of cold northerly spring winds. As, therefore, the period of pregnancy in sheep lasts a few days over five months, the month extending from the first week in October to the third week in November may be considered as the appropriate season for copulation, unless, indeed, if it be desired to obtain house lambs, when the ram should be introduced as early as the month of August. The copulation requires considerable care, lest, indeed, the ewes be not in such condition as to warrant a judicious breeder in propagating from them, and lest they be ill-served by the ram, who in such cases should be superseded. If the ram be inadequate to the service, the ewes will continue to follow him, whereas, if his duties be fulfilled, he will gradually have fewer and fewer followers. In the second autumn both the ewe and the ram are sufficiently developed for breeding; that is, if born in the month of March, and at an age varying from one year and seven to one year and eight months; but the ram in his first season is incompetent to serve more than about two score of ewes, whereas in his second and third seasons he is fully adequate to the service of a flock of from three to four score of ewes. And no sooner does it become apparent that the ewes are effectively breeding, than they should be tended with especial care. This condition is more immediately observable by the subsidence of the sexual evidences, and by their keeping aloof; and as this takes place they should be removed to a convenient and sheltered spot appropriated exclusively to them, and where they will be supplied with a sufficiency of generous food (in moderation). Good pasture and green winter food are advantageous, but should not be exclusively allowed; and care should be taken that they be not folded upon very wet and sodden soil, but that they be removed to dry places, in which also shelter must be afforded against the keen and cutting winds of uplands. Care should be taken that neither is the ewe gorged to excess with food, which is not uncommon where sheep have an unlimited access to some particular and favorite article, nor that she be allowed too scanty and impoverished a species of food, nor that there be access for the ram after pregnancy has once ensued, nor that she be harassed by the drivers, &c., inasmuch as all these circumstances may induce a premature delivery; when though abortion be less frequent and less communicative amongst sheep than amongst cows, and though it be generally attended with little or no danger to the dam, there is no chance of rearing the lamb. There is, moreover, but very rarely an opportunity of arresting the course of a premature labor, because the ewe betrays but few premonitory symptoms until the process of ejecting the fœtus has fairly set in. The indications of approaching abortion are akin to those already described under the head of the "Cow," &c. If the abortion should actually occur, the ewe will require such appropriate treatment as will be found described at large in the article on "Abortion," in the directions for the treatment of disease.

76. Parturition.—All risk of premature labor having been passed, we next arrive at the period of *yeaning* or of parturition.* As the time approaches at which some of the earlier ewes of a flock are expected to be delivered, the ewes should be confined within a comparatively small inclosure, and near at hand, that individual attention may be bestowed upon them. An inner fold should also be constructed with thatched hurdles, or some other material which may serve to afford shelter; and another portion of land, with abundance of keep (if possible), should also be parted off, wherein such of the ewes as yield twins should be conveyed. It is by no means disadvantageous, moreover, to confine all the ewes, which have not lambed during the night, within a smaller and sheltered inclosure or fold, so that they may be more readily watched by the person whose duty it is to superintend the lambing. This person will then continue to watch them night and day, always provided with the means of rendering mechanical assistance should it be required, and furnished with the medicaments which may be urgently and immediately called for, as well as with the means of marking the lambs, to provide against confusion consequent upon the birth of many twins. In the meanwhile, also, the operation known by the name of *clatting* should be performed; this consists of clipping away the wool from about the thighs and udder, so as to render the milk as accessible as possible for the lambs.

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* It is obvious that, to the breeder, the production of twins is an important source of profit; but twins are neither usual nor desirable at the first parturition. It is

But we do not wish to be understood to recommend direct interference during the progress of labor, unless this should become imperative from the duration of the labor and the exhaustion of the ewe. Because there are comparatively few cases amongst sheep which demand any positive interference. But if the labor extend over a period of more than twenty-four hours, and the ewe should appear to sink under the continued suffering, or if the movements of the animal should indicate that the pains were evidently diminishing, and were inadequate to expel the fœtus, *medicinal* or *mechanical* interference would be called

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from the second yeaning (or third year) to the fourth yeaning (or fifth year) that twins are generally yielded, and are most advantageous to the breeder.

At the first yeaning the ewe will not generally generate milk enough to sustain a double offspring.

There are frequent cases of three lambs being yielded at a birth; but in such cases it were desirable to leave one to be reared by hand, or by another ewe, because very few ewes are capable of nourishing three lambs at one time.

In the majority of cases, the ewe is fattened after her fourth parturition; and this is strictly in accordance with her capabilities, inasmuch as the absence of teeth incapacitates her from procuring sufficient sustenance for her own requirements and for those of her parasitic offspring. But when the teeth (as occasionally occurs) are not deficient, there is nothing to incapacitate the ewe from rearing two or even more additional lambs in successive seasons.

for. Or, again, if at any earlier period it should become apparent that mechanical obstructions to unassisted delivery existed, such a state of things would warrant an earlier interference.

It should, however, be held, as a general rule, that interference is objectionable, unless imperatively requisite. During the prevalence of cold easterly winds, it is generally observed, that the pains are less powerful than in a warm and moist state of the atmosphere, and consequently under the former circumstance the labor will naturally be of longer duration; and all these conditions should be duly considered. *The same rules apply respecting the proper position of the fœtus, and the mechanical means for the assistance of the dam, as those already described under the head of "Parturition," in respect of cows* (Section II), saving that the mere introduction of the hand will suffice where operations are unnecessary, and that there is no necessity for the same application of power.

77. The Early Treatment of Lambs.—The first care should be to supply the place of the mother, in administering food to the lamb; and this is not unfrequently requisite, not only from the inability of the lamb to find the teat or to suck, but often from the timidity or temporary recklessness of the dam. The shepherd should be provided with milk (ewe's milk if possible) in a bottle, whence he can feed the helpless or desolate lambs. It is almost needless to add, that this milk should be kept warm, by being carried in the breast as close to the body as possible. Even young ewes, in their first lambing, when they momentarily abandon their lambs, rarely abstain from seeking them out when the fulness of the udder begins to inconvenience them. Until, however, the lambs receive sufficient attention from the dam, in such cases it is incumbent on the shepherd to provide them with a sufficiency of warmth and food by artificial means. Where there are twins, it is desirable to remove the dam and her young to the fold appropriated especially to the twin lambs as soon as possible. And in cases (of occasional occurrence with the first lambing) in which the dam absolutely forsakes her young, we may easily provide a foster-mother, if there be any ewe in the flock which has lost her lamb, by stripping the dead lamb of its skin, and folding the substitute therein for a time, until the ewe has got accustomed to her false young one, by means of the scent which originally deceived her. In cases in which a lamb is abandoned by the ewe, she should be folded apart with it (the lamb being meanwhile fed by hand), until the dam becomes reconciled to it, and instinctively seeks to suckle it, to relieve the pain arising from distension of the udder. In cases of the first confusion, occurring amongst the twin lambs in the first days of their separate inclosure, constant attention will be necessary, as well to guard ewes, which are deficient of strength, from being drained beyond their strength, as to provide for such lambs as may be rejected on all hands. With respect to the lambs, this attention will constantly be requisite, until they are able to provide themselves with a sufficient quantity of food, independently of the udder. Some will require to be reared by hand by means of the bottle, when they pine and fall away, and have evidently not sufficient strength to suckle of their own accord.

Lambs are rarely difficult of treatment in this manner. But if after some time, and after the lamb has previously been suckled without artificial interference, we should notice an unaccountable falling off in condition, and an evident decline of health and strength, it will be desirable to examine the dam in respect of general health, and of the sufficiency and quality of her milk, and to provide against the ill consequences of any derangement by prompt treatment. If the deficiency be attributable to scantiness or poorness of keep, it will be necessary to obviate this mischief as gradually and carefully as possible, lest the too sudden transition should be followed by an inflammatory affection of the liver in the lamb, as is frequently the case. (See the article on "Gall-lamb.") If the milk be productive of continued purging in the lamb, it will be evident that for some reason it disagrees, and the lamb should be artificially fed, or supplied by another ewe, if possible, for a time. As the lambs advance, so as to afford some idea of their future qualifications in the evidences of strength and kindliness, and in the quality of the fleece, we have an opportunity of making our selection of those which should be preserved for breeding, a reason why the habit of castrating or spaying very early is an error; because, with respect to the *castration* of the tup-lambs, of which very few indeed will be preserved *intact*, it is quite as well to have the benefit of as much development as possible to assist us in making a judicious selection of the males, through which all the merits or defects of the breed are to be transmitted from one generation to another. And with respect to the *spaying* of the ewe-lambs, from which we will have to make a large selection, the same advantage accrues from allowing the lamb as much growth and development as can be safely allowed before the operation. (See the article on "Castration and Spaying.")

78. Docking.—This operation, which some breeders, or rather fanciers, repudiate, evidently tends to enhance the profitableness of the sheep; apart from the fact that it renders the lamb much less troublesome by removing a frequent cause of uncleanliness. The principal thing is to choose warm weather for the operation, but to afford shelter to the lambs from too severe exposure to the sun. The fact that warmth is important to the lamb after *docking*, should be a sufficient reason for not performing the operation too immediately after birth. There is not so much risk of inconvenience attending it in the three-months-old lamb as in that of three days; and, as the season is then far advanced, the disadvantages attending the exposure to cold, &c., are obviated.

The most important precaution to be observed in docking is, that the tail should be severed without cutting through the bone, that is, in the partition between two of the vertebræ or links. The third joint is in general the point of separation. When the loss of blood is considerable, and continues for an undue length of time, it is sometimes found requisite to resort to mechanical means to arrest it, such as the binding round of the extremity of the tail—as it remains—tightly with stout thread for *a short time.**

79. The Weaning of Lambs.—As a general rule, we may wean the lamb at from fifteen to eighteen weeks old. But, inasmuch as the period of copulation is very important (see "Breeding,") the weaning must, in many respects, be accommodated to the probable time required by the dam to acquire her strength for breeding again; so that, on poor lands, and in ungenial climates, the period of weaning often ranges from ten to twelve weeks after birth; whereas, under very advantageous circumstances in respect of pasture and climate, the dam is not deteriorated in her breeding capacity if the lambs be not weaned until they have attained from twenty to twenty-five weeks of age. The lambs, at the period of weaning, should be removed to pasture more rich and productive than that on which they had been folded with the dams; but, if possible, there should be intermediate gradations in the quality of the food; for, whereas the lambs will require better independent feeding, it will also be advantageous to be very careful in affording them an increase in the abundance and richness of the pasture. The better method of parting the ewe and the lamb is as follows:

1st. To select a new pasture for the lambs, at a considerable distance from that upon which they were originally folded with the dams, consistent in abundance and quality with the above description.

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* In the majority of cases, the use of tincture of *Calendula* is far preferable; and the following application should in general be adopted: To one part of tincture of Calendula add four parts of water, and bathe the bleeding extremity freely with the lotion occasionally, until the bleeding ceases; or even bind up the parts with linen rag, thoroughly saturated with this lotion.

2d. To begin by folding the *ewes and lambs together* upon the newly-selected pasture which is intended to be appropriated to *lambs only*.

3d. After the ewes and lambs have been *together* for several days upon the new pasture, to remove the *former*, either to the locality originally occupied by them, or to some other of an equally exhausted or impoverished description.

The separation will thus be rendered less apparent and painful, particularly if the ewes and lambs be so placed as to be beyond hearing of one another. So that upon farms of small extent (which, however, are ill-adapted to the breeding of large flocks), it should be so contrived that, when separated, the ewes and lambs are at opposite extremities of the tract of land.

80. Ewe's Milk: its Uses, Advantages, and Disadvantages.—The custom of making use of ewe's milk, which is still adhered to in some parts of the Continent, requires some notice, for the very reason that it prevails; although, where the more profitable products of the sheep are properly considered, it will be found that the artificial extraction and adaptation of the milk reacts injuriously upon the fleece and flesh. In richness, the milk of the sheep is almost unequalled, but it possesses a peculiar oleaginous property which considerably detracts from the value and conservation of its products. The use of butter made from ewe's milk is thus almost precluded from its tendency to become tainted almost immediately; the cheese extracted from it is, however, much used, and yields a favorite commodity in some parts of Europe. Nor has the practice been totally abandoned in some of the mountainous districts of Great Britain and Ireland.

It is obvious, however, from what has been stated relatively to the method of breeding and rearing of sheep, that the habit of milking ewes must be injurious.

1st. Because, if they be milked before the lambs are weaned, the lambs will necessarily suffer.

2d. Because the interval between the weaning of the lamb, and the renewed appliance of the ewe to breeding purposes should, in order to render the ewe most profitable, be only sufficient to promote an adequate strength of constitution.

3d. Because the artificial removal and employment of this product will react to the deterioration of properties which are sources of far greater profit; namely, upon the wool and flesh. Moreover, it is impossible to obtain a firm and consistent butter from ewe's milk, owing to the very oily nature of the cream.

As in respect of all other products, however, it cannot escape the observation of the sagacious reader, that the relative advantages of adapting this or any other product to particular uses, must be regulated by the relative advantages which may be derived from them in particular localities. Wherefore if, in various parts of France, the custom of milking ewes for the manufacture of cheese be still adhered to, it is because that is found a better source of profit than either the fleece or flesh. Although, nevertheless, it is very questionable whether the last two might not be rendered yet more productive and profitable by the suspension of this source of produce.

81. The Uses of the Sheep's Skin.—The uses of the sheep's and lamb's skin, with or without the fleece, are sufficiently known to excuse us from entering largely upon this topic. It should be observed, nevertheless, in respect of the comparative value of different skins, that whatever conduces to the fullest development of the general good qualities of the animal, in respect of flesh, and to the preservation of healthy action generally, will serve to enhance the soundness and value of the skin.

82. The Teeth, &c., as Indications of Age in the Sheep.—In respect of sheep which are provided with horns, the same general remarks will apply to them as have already been recited in speaking of the horns of cows, oxen, &c.

With regard to the teeth, we have also the same number and the same general construction; that is, we find the absence of incisors in the upper jaw, eight incisors in the lower jaw, and six grinders above and below on each side, making *a complete set of*—

Incisors or *cutting teeth*—2 central (2), and 3 on each side (6) on the lower jaw, ...	8
Molars or *grinding teeth*—6 on each side above (12), and the like number below (12), ...	24
Total number, ...	32

These teeth, however, like those of the horse, and of cattle before described, are of gradual development, and appear first of all as temporary or milk teeth (excepting two of the grinders) and are wholly perfected as a permanent set as early as the completion of the fifth year.

There is, however, frequently a variation of several months in the development of these teeth, according to the greater or less degree of strength, and to the quality and abundance of the food, and to a multitude of such qualifying conditions.

In the majority of instances in which the ewe is in good condition, and the lamb strong, the latter will be born with the *two central cutting milk teeth;* five grinders on each side, above (10), and the like number below (10) being present.

Thus, the first appearance of the mouth will present the following array of teeth:

Incisors or *cutting teeth, temporary*—in the lower jaw only 2 central, .	2
Grinding teeth or *molars*—5 on each side above (10), and the like number below (10), ...	20
Total number, ...	22

Like that of the ox, cow, &c., the set of *temporary incisors* is completed within the first month, making them a complete set of milk teeth, twenty-eight in number.

In all general respects beyond this, we must refer the reader to the article on the Teeth, under the head of "The Ox, Cow, &c."

But the temporary incisors cannot be said to be matured in less than from sixty to sixty-five weeks after birth, whereas, ordinarily, before the completion, we find the substitution of two central *permanent* incisors, and in the course of from thirty to thirty-five months we may observe another *permanent* incisor on each side of the two central teeth, making four altogether; each period of twelve months adding two more *perfected* permanent incisors to the jaw, until, at five years old, the sheep has completed its set of new *cutting* teeth, and has, in the meanwhile, also completed its set of *permanent* grinders by the gradual substitution of permanent for milk teeth, and by the protrusion of the sixth molar above and below on each side.

The wear, damage, and casting of these permanent teeth, after the fifth year, offers but a very imperfect clue to age, as circumstances will always hasten this state of things. But it should also be remarked that, saving for slaughter, the sheep becomes comparatively unprofitable after the fifth or sixth year, and that at that age the less time is lost in fattening the better, if it be anticipated to render the sheep of any value.

The construction of the grinding teeth of the sheep is rather peculiar, which will explain for the casual observer the peculiar oblique method of mastication adopted by the animal. These teeth are furnished, on the grinding surface, with alternate ridges and indentations (running athwart the crown of the tooth, from the external to the internal edge), which indentations, &c., are exactly matched by similar alternate irregularities on the crown of those of the other jaw, so that they correspond with and fit one another. Besides this the crowns of the teeth above and below are matched, in respect of an oblique slope, those of the upper jaw being shorter at the outer than at the inner edge, and those of the lower jaw shorter at the inner than at the outer edge; the consequence of which (combined with the irregular surface above described) is that in the oblique action of the jaw all the food is secure of being thoroughly ground down. The age of the sheep can only be judged of by the degree of relative advancement of the teeth; there are no positive marks to be conveniently modified from time to time.

The difference between the *temporary* and *permanent* incisors is easily distinguishable in the size and in the sharpness, relatively to the general development of the frame, as evidence that they are too recent to have been much worn.

The first glance of the mouth would lead many persons to mistake the sheep at four years old for that at five, but upon closer examination it will be found that the two extreme incisors have become so much attenuated, and so overgrown by the larger *permanent* teeth, as to be almost totally concealed; whereas if they belonged to a sheep of five full years, the whole set of incisors would be equally developed.

83. Shearing.—Shearing requires no particular notice, because all those who have tended sheep are sufficiently acquainted with the operation, and because nature herself, in the increased heat of the season and the natural shedding of the wool, has sufficiently pointed out the period of shearing, which varies only according to climate and circumstances.

SECTION IV.

84. The Goat.—The goat has not become of sufficient commercial importance in this country to attract very much attention. There are, however, many points of value about it, viz.:

1st. The milk, which has many advantages over ewe's milk.

2d. The skin, which is in high request for some purposes.

3d. The flesh, which is comparatively rarely used in this country.

4th. The hair, which is used in some of the higher orders of manufacture.

The goat is, as a rule, more hardy than the sheep, and therefore is not calculated to require so much attention; nor is there the same multitude of differences in breeds, owing to the lesser degree of cultivation which has been devoted to it. But as a general rule it will suffice to say:

1st. That everything which tends to promote health will enhance the value of the produce derived from it.

2dly. That in the majority of instances the remarks which are applicable to the sheep are also applicable to the goat; except, indeed, it be that the latter may be *milked as unprejudicially* as the cow.

Section V.

THE DOG.

85. Its Qualifications, Varieties, Breeding, Rearing, and General Management.—The superior organism and intelligence of the dog, combined with its attachment and fidelity to mankind, have rendered it the companion as well as the trusty servant of man, and have thus placed it in the highest rank amongst our domestic animals, although there be little of commercial value attached to it. That cultivation has greatly enhanced its qualifications is evident from the fact ascertained from experience, that the organism (if short of maturity) becomes materially modified by change of circumstances, and that the dog, which would first have found a place amongst one of the great natural divisions, will subsequently become merged into another by an imperceptible alteration, amounting, in many cases, to the change of organic construction. When we select the greyhound, lurcher, spaniel, setter, pointer, Newfoundland, St. Bernard's dog, &c., for particular purposes, we do so, because their sagacity has already been directed to such purposes. Not but that many dogs, which do not belong to any or either of these races distinctly,* might, by early training, have been taught to perform the same duties provided the organs of sight or scent were sufficiently developed; whilst two or three generations, deduced from dogs of a different organic construction, would, in many cases, have produced an approximation to the breed required if the attention of the breeder had been constantly directed to this object. It is clear, indeed, that many of those breeds of dogs, which are now distinguished for very different qualifications, may be traced to a common origin, and climate alone is well known to effect a complete change in the character and disposition of the dog.

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* Some years ago we had occasion to observe the remarkable sagacity of a thorough nondescript. No dog-fancier would have tolerated such an animal, and no scientific naturalist could have succeeded in classifying it under the head of any particular breed. It was one of those dogs which seem to contain a little of everything. It occurred, however, that in the course of a pedestrian tour in Switzerland, we one day contrived to be placed in a most perilous situation; for, in crossing a precipice, the loose stones had given beneath us, and we were on the point of being borne down

Organic Distinctions of Race.—These distinctions consist chiefly in the different construction of the skull and of the cerebral apparatus; namely, for the greater keenness of the sight, the same of the scent, or for the general elevation of the powers of perception. The most eminent naturalists have simplified the classification of dogs, according to the degree of development thus afforded to the intelligence, into *three classes:*

The *first* of which is represented by the majority of *aboriginal* dogs (wherein we may descry the absence of cultivation as having left the natural organism unchanged), and amongst tame animals, by the varieties of the *greyhound.* The distinctive peculiarieties of construction

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several thousand feet. Catching at the root of a stunted bush which overhung us as we passed, we had succeeded in arresting the perilous descent; but another difficulty, no less serious apparently than the former, occurred to discourage us. In the first place, there was no means of regaining secure ground unaided (on a wild uninhabited rock); in the next place, the hold which we had obtained was obviously giving way. We had been accompanied by the nondescript dog above mentioned; and no sooner did the accident occur, than he placed himself on the most prominent jutting rock above us, and began to bay in the most piteous manner. The loud, long howl re-echoed amongst the adjacent hills and cliffs. But the echoes seemed the sad and only reply; when, all of a sudden, the dog, which had previously stood motionless and baying, as above described, scrambled at full speed along the acclivity. We shuddered at the thought that our only companion had deserted us, when we were once more greeted with the same howl at a distance, followed by the intermitting tinkle of the mountain-goat bells. Then followed a pause, till, by degrees, the peculiar howl grew nearer and louder again; and at last the dog reappeared, holding in his mouth the skirt of a shepherd-boy's smock, whereby he was dragging him to the spot. Upon perceiving us, the lad, who had been at a loss to understand the extraordinary demeanor of the dog, but who had followed him out of curiosity, readily understood the cause of the interference. We were rescued without loss of time; and the shepherd conducted us to the spot (more than a mile distant) whence the dog had fetched him, describing the manner in which he had first of all stood and bayed at his feet, and then seized the skirt, which he held fast when we first perceived his return, whereby he had dragged him to the spot at which the accident had happened.

which characterize this class consist in the lengthening and attenuation of the head and nose (which recede in one continued line obliquely, but with little sudden elevation of the forehead and skull), and in the close propinquity of the parietal bones, whereby the cerebral apparatus is confined and depressed, whereas the important apparatus of the olfactory nerves has not sufficient scope for development. The consequence of these peculiarities is, that the dog is deficient in scent and in general intelligence, and that he is adapted to few uses, and to such only in which his *instinct* simply is in concurrence with his *training*. The absence of higher qualifications is, however, compensated by physical advantages, and having less *sagacity* the greyhound has the greatest speed, being equal in this respect to the race-horse. He follows his game or prey by sight only.

The *second* class comprises all the dogs of the highest degree of intelligence, nor are we to be understood to admit certain breeds only within the comprehension of this division. For, as has been already noticed, many nondescript dogs, which fall into contempt in the estimation of the connoisseur, are classed according to the development of the superior organs under this head. And although they be not adapted to the pursuit of particular game, they are often found the most sagacious, attached, and faithful servants. Amongst the distinct breeds which come under the general denomination of the second class, we may number all varieties of spaniels, the pointer, setter, Newfoundland, St. Bernard's dog, the sheep and drovers' dogs, the beagle and all varieties of hounds, the lurcher, &c., &c. The distinctive peculiarities of construction which characterize this class consist in the less degree of length and attenuation, and in the greater expansion of the head and nose (which recede as already described under the head of the first class, but which are subject to greater dilatation), whereby the olfactory nerves, which are in fact a continuation of the substance of the brain in them, as well as the general development of the cerebral arrangement, have the fullest scope, and, consequently, a higher degree and a broader range of capacity.

The *third* class, which includes the majority of terriers, the bull-dog, mastiff, and dogs of this description, is distinguishable by the less degree of development in the superior organs, and by the greater accession of mere animal or physical powers. Dogs of this kind are useful in their vocation where it is requisite to secure ferocity rather than sagacity. The structure of the brain is such that the powers of perception are deteriorated, nor is there the immediate connection between the substance of the brain and the main branches of nerve which serve the organs of sense. The skull rises somewhat abruptly from the root of the nose, and the latter, although not compressed, does not extend in the continual downward direction which is calculated to facilitate the adaptation of the scent. It should not be omitted, as an illustration of his less intelligent capacity, that the brain of the bull-dog, compared with that of the Newfoundland, averages one-fifth only of the relative proportion of weight to that of the body generally.

86. The Intelligence and Superior Organism of the Dog, and their Adaptation by Training.—The organic construction of the brain is such, that the conducting or communicating branches are gifted with a capability as far superior to that of the human being, as the retentive or comparative department is inferior to that of man. Wherefore the senses, as they are called, including *smell*,* sight, and hearing, are by so much more acute as the reflective faculties are relatively deficient. Although, in the higher orders of the dog, we may remark a very considerable development of powers of combination, reasoning, imagination, and retentiveness or memory; whereas mankind, in a state of nature, are known to be gifted with more sensitive *recipient* faculties in proportion as the *retentive* organs are uncultivated, and consequently less fully developed. The comparison clearly shows that, in the one instance as in the other, either or both branches of the organism of intelligence and perception may be heightened by training and exercise. It is well known to the breeders and trainers of the dog that it possesses a strong disposition to persevere in the prosecution of any duty assigned to it, and that, therefore, it is particularly susceptible of being taught, and that the power of memory will also become developed to a remarkable degree by being exercised for any particular purpose.

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* The olfactory nerve in the dog is, as has already been observed, a continuation of the brain, and is more fully developed than in any of the animals hereinbefore described, whilst in all of them it is greater than in man; because mankind, gifted with other faculties for purposes of discriminating between that which is beneficial and that which is obnoxious, and for securing the necessaries of life, have less need of this sense to assist them; whereas, to the greater part of the subordinate animals it is essential. Some beasts of prey are deficient in this respect, because they depend upon the constant service of the power of following scent with which other and inferior animals in their own regions are gifted. The olfactory nerve in the dog is imperceptibly merged in the mucous membrane of the nostrils, whence it conveys the slightest communication of scent to the main branch, and to the *retentive* and *comparative* organs seated in the substance of the brain. Of all the animals which are included in this treatise, the horse, having the least need of strong olfactory powers, possesses the least development of this branch of nerves. The ox, cow, and sheep, which are, to a certain extent, more dependent upon this organ, possess a comparatively larger development in this respect; and the pig, which is provided with a snout, wherewith to muddle under ground and amongst offal, for the purpose of extracting his food, is also provided with a comparatively larger development of olfactory nerve to assist him in detecting the presence of food Of all these, however, the dog has the greatest share, because he depends almost exclusively, in many respects, upon the power of distinguishing by scent.

As soon, therefore, as the physical powers of the puppy become sufficiently developed to render him capable of being applied to any given occupation, the training may be commenced consistently with the natural qualifications which the parents are known to possess. In the course of the first year every puppy, designed for some especial use, should have been subjected to a repeated course of lessons, accompanied by an old and experienced dog; the last being as free from faults in his particular duties as possible. Because, insomuch as the dog possesses remarkable powers of imitation, the puppy will be as likely to mimic defects as perfections, and especially because if the puppy be of a breed employed in the pursuit of game, and be under training for the same purpose, the natural stimulus afforded to him by the pursuit will render him more subject to follow the defects (generally arising from lack of sufficient self-command) than the perfections, which consist in keeping the fullest control over the inferior order of *instinct* upon which the subsequent attainments are grafted.

87. The Physical Construction of the Dog as adapted to Serve its Superior Organs, and its General Requirements.—These differ materially from those of the animals already enumerated; *first*, because the dog subsists upon totally different food, and, therefore, requires a different apparatus connected with the process of digestion; and, *secondly*, because it moves in a sphere, as respects intelligence, which is more nearly approximated to the service of man in his various callings, than to the mere supply of his physical wants. The dog, in fact, occupies an intermediate gradation of animal life. For these distinct purposes, we have, therefore a totally different arrangement, amongst other things in respect of the tongue and teeth, and also in respect of the brain and nervous system. *The tongue*, wherewith the dog (as do also the majority of feline animals) laps whatever fluid he receives into his mouth, is so constructed as to form a species of basin wherein the fluid is first received, and whence it is deposited at the upper orifice of the throat. *The teeth* are so constructed as to render them not only the chief offensive and defensive weapon (as they are in the majority of carnivorous animals), but also to adapt them to the purposes of dividing and masticating flesh and bone, which constitute the staple food of the dog.

88. The Teeth of the Dog as to Construction, Number, &c., and as an Index of Age.*—The number of the complete set of teeth in the dog is subject to some variation. Some dogs have been known to possess as many as six supernumerary teeth, making a total number of forty-six. In the majority of cases, they are provided with two additional teeth in the lower jaw, making a total number of *forty-two*, instead of *forty*, as would be the case if the upper and lower jaws were provided alike. Thus, whereas we may consider the regular arrangement of the mouth to display an array of six grinders on each side above (twelve), and the like number below, making a total of *twenty-four* grinders, we very commonly find the presence of *twenty-six* grinders according to the following enumeration of the perfect set:

Incisors or *cutting teeth*—2 *central* above and below (4), 2 on each side above (4), and the like number below (4), ...	12
Tusks or *canine teeth*—1 on each side above (2), and the like number below (2), ...	4
Grinding teeth or *molars*—6 on each side above (12), and 7 on each side below (14), (including 1 supernumerary tooth on each side), .	26
Making a total number of	42

The array of teeth should also be represented thus in respect of the difference between the upper and lower jaws:

Upper jaw:	
Incisors—2 central (2), and 2 on each side (4), making	6
Tusks—1 on each side, ...	2
Grinders—6 on each side, ...	12
Total number in the *upper jaw*, ...	20
Lower jaw:	
Incisors—2 central (2), and two on each side (4), making	6
Tusks—1 on each side, ...	2
Grinders—7 on each side, including the additional or supernumerary tooth on either hand, ...	14
Total number in the *lower jaw*, ...	22

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* As an index of age, in reality, the teeth of the dog serve but comparatively little purpose; for, in the first place, there is no *regular progress of wear*, as in respect of the animals hereinbefore described; in the next place, they are subject to an infinity of modifications, occasioned by the nature of the food, and the greater or less degree of violence to which they are exposed; and, like those of all carnivorous animals, they are so much more *rapidly* and *permanently* perfected, as to preclude the possibility of watching the progress of from six to eight years, by their degree of development, substitution, or wear. It may be said, indeed, that little or no reliance can be placed upon the indication afforded by the teeth after the completion of the fourth year.

As an Indication of Health and Soundness the teeth are of considerable service; for in the absence of any deteriorating influences in these respects, they possess a peculiar and brilliant whiteness, which is unmistakable.

In Conformation.—The *incisors*, or *cutting teeth* of the upper jaw, differ from those of the lower, inasmuch as in the upper jaw, the two incisors which are adjacent to the tusks are the largest and strongest, and most prominent, overhanging the corner incisors of the lower jaw; whereas, in the lower jaw, the two central incisors maintain the chief importance. The cutting teeth of the upper and lower jaws fit exactly upon one another, and are so constructed with elevated and receding portions of the surfaces of contact, that the convex part, which is more distinct in the teeth of the upper jaw, fits into the concave parts of the opposite teeth below.

89. The Breeding, Rearing, Feeding, and General Management of the Dog.—*Breeding Physiologically Considered:* The same general remarks apply to the dog, in this respect, as have already been recited in respect of domestic animals generally, and of each species in particular. But the dog is, perhaps, as a general rule, less subject to the especial direction of the owner in this respect than any of the other animals. If, however, the object be to propagate and rear a particular kind of dog for particular purposes, the owner or breeder must pay accurate attention to the first indications of *heat* in the bitch, and must be careful to allow the access of no other male to her, but the male of the particular breed which he is desirous of rearing. He should consider, as already stated generally, and under the head of puppies particularly, what are the salient merits of particular dogs of this breed, and thus provide against the mischief of propagating hereditary defects, and secure the transmission of the merits which it is his object to preserve.

There are defects or merits of physical construction, age, health, habits, and disposition generally, as well as respecting the particular employment, for which the brood is designed in particular.

The Period at which Breeding may be Commenced, and Treatment during Pregnancy.—As a general rule, it should be observed, that the breeding, either from the male or female, not fully matured, is an error. Both should have completed the second year. The bitch should by no means be subjected to undue exposure, and should be compelled to take a sufficiency of exercise. The food should be ample and generous; the periods of feeding regular; her housing warm; her litter very clean, and continual attention should be paid to the condition of the digestive functions, the nature of the excrements, the state of the teats, mouth, and pulse during the period of pregnancy, and especially towards its close. It is generally desirable to arrange matters so that the litter of puppies shall be born at the opening of the spring, or in the course of the summer, when they will have a full season, or the best part of it, before them, for the development of their physical qualifications. This, however, depends very much, of course, upon the condition of the bitch, and whether her heat, appearing at an inconvenient period, can be moderated by less stimulating diet, or by medicinal treatment.* The period of gestation lasts from two months to nine weeks.

90. Parturition.—The delivery is not uncommonly followed with untoward circumstances, owing to the neglect of some of the most essential precautions during pregnancy, and often owing to mechanical causes, arising out of the injudicious copulation of a male and female of inconsistent physical development. In cases of difficulty, the bitch in labor should be closely watched and appropriately treated with as little delay as possible. The number of puppies yielded at a birth varies considerably with different breeds (and sometimes with the same bitch, or with different bitches of the same breed), and there will generally be a lapse of from ten to forty minutes between the delivery of each puppy. As soon as the whole litter is produced, every precaution should be taken to protect both the bitch and the puppies from exposure, and the mother should have an ample supply of milk provided for her. We should then turn our attention to the number of the pups; because the best bred bitches can barely rear more than four or five effectually, and the sooner the supernumerary pups are removed the better. Breeders who are chary of their breed, generally destroy those which are removed, but they may always be reared by hand; and if this be the intention, it were as well to select the finest puppies for this purpose. Some breeders have handed them over to the care of a foster-mother, but we must confess a strong preference for purely artificial rearing, in which case there will be no hazard of deterioration from defects in the nurse. The milk with which the pups are fed, should at first be warm, but should be gradually given less and less heated, until it is given quite cold.

91. The Rearing of Puppies.—By degrees as the puppies become strong enough to feed well, we may begin to add stale bread-crumb and oatmeal to the milk to facilitate and promote the weaning, and from this we may gradually introduce flesh, at first in very small quantities, as the teeth develop themselves. The feeding should always take place at regular intervals. Great care should be taken always to give *fresh food* from *clean vessels,* allowing no residue of a former meal to remain with the food. *The operations of cropping the ears, docking the tails, and removing the dew-claws, as they are called,* are as injurious as they are foolish and fantastical. The two former arise merely from a foolish whim, and the latter from a no less foolish prejudice. It were strange, indeed, if art had better ascertained the *natural* requirements of animal life and structure than nature herself. It were far better if the breeder of dogs would confine his attention to enforcing regularity of feeding (in sufficiency, and not to excess), equal regularity and abundance of exercise, proper provision for the sufficient warmth and comfort of the young brood, as well as for the thorough cleanliness and ventilation of the kennel, &c. For in all these respects, a degree of inattention may materially deteriorate the natural qualifications of the puppy. The constant confinement in a kennel not sufficiently cleaned and purified, and consequently infected with noisome odors, is more likely than anything else to derange the olfactory organ so essential to the sporting dog.

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* *Cantharis* is specific in this respect. It should not, however, be omitted, that breeding is very beneficial to the bitch.

92. The Training or Breaking-in.—This is a process which the owner of a valuable puppy should take the precaution to see conducted under his own eye; for, inasmuch as it is generally conducted with violence and inhumanity, it is thereby rendered the more imperfect and fruitless. There are very few well-bred dogs which are not to be trained without the least admixture of severity, other than the reprimand of the voice, or the mere raising of the hand; and it is notorious, in respect of the training of all animals, that the docility, tractability, and regularity of temper, so essential to a domestic animal, are one and all induced by gentle tuition, and generally injured by violence; whereas implicit submission and obedience to a word or nod is induced, not by the infliction of punishment in cases of disregard which the puppy does not at first understand, but by the repeated gentle and constant indication of duty by signs, sounds, and manipulation.

The breaking-in of a sporting dog cannot be properly conducted without the example of an older, experienced, steady, and manageable dog, whose intelligence, movements, and obedience should be as complete as possible. The puppy should be first taught to understand the words of command. The pursuit of game will be natural to him; but if he be found to pursue inferior birds, &c., it will be desirable to intimate, by the tone adopted towards him, that he is at fault. In comparison as he fulfils his duties, and obeys all his orders, to "down charge," "back," &c., implicitly, the puppy should be caressed in token of appreciation. Much greater results may be expected from rewarding obedience, &c., with kindness, than from the correction of error by violence. *And it may be received as a general rule, that the dog which requires violence* (or it might be added, which submits to it constantly), *is barely worth the trouble of breaking in.*

93. **Feeding and General Management.**—In many respects we have already touched upon the more important points relating to these matters, but there are yet a few general regulations to which the reader's attention should be drawn.

1st. The quantity of food, which should be governed by the degree of exertion required of the animal, and by his consequent requirements, as well as by the season and temperature. For dogs cannot only consume more food without prejudice in cold weather than during the prevalence of heat, but, moreover, they require it.

2d. The quality and nature of the food, which should consist of a preponderance of vegetable over animal matter. Oatmeal, broken biscuits sopped, and mixed with the liquor of meat, with the addition of a comparatively small portion of flesh, constitute the better sort of food for the sporting dog. The yard dog, &c., may be fed upon the refuse of the table, where there is a sufficiency of such food, but *seasoning and fat* should be withheld from him. The food should be given cold, and always in clean vessels.

3d. In respect of the drink, an ample supply of clean, cold water, should never be withheld.

4th. The frequency of feeding, which should be limited to two adequate feeds every day; with this reservation, however, that the sporting dog, about to be employed in the field, should neither be taken out without being previously fed at all, nor should he be allowed to swallow an equal quantity of food, or food of an equally substantial kind.

The state of the kennel, as already repeated more than once, should never be lost sight of; dryness, cleanliness, ventilation, shelter, shade and coolness in hot weather, and warmth, without closeness, during the prevalence of cold, being the chief essentials. The exposure of the kennel (in which the dog has not sufficient incitement to motion to induce him to move continually) to cold searching winds, is a serious error. Lastly, no dog, whatever be his employment, should constantly be confined. Daily and free exercise in the open air is as essential to the dog as to other animals, and the want of it engenders many of the diseases which we shall hereafter have occasion to notice.

SECTION VI.

THE PIG.

94. General Remarks.—The pig may be ranked amongst the most serviceable of domestic animals, although, indeed, it does not possess the extensive productive properties of some, or the superior intelligence of others. Not but that in respect of sagacity, as with regard to many other features, the pig is, in the vulgar acceptation of his gifts, a most villanously slandered creature.

Firstly. There are numerous and well-authenticated anecdotes illustrative of a considerable degree of intelligence possessed by him, and it is not unfrequent, even in the ordinary management of swine, that we have reason to remark a power of observation, memory, and combination. Whereas it should not be forgotten, that the general method of treatment in respect of swine, as domestic animals, is calculated to keep dormant any of the finer traits of sagacity by leaving to nothing but to mere physical functions a field for operation. The pig seems to have nothing left to himself for the exercise of his functions but the mere routine of food, drink, and rest, which the merest animal instinct and necessity will prompt. Every necessity is provided for, every want is obviated.

Secondly. The filth, which is proverbially attributed to the pig, is much more truly attributable to the mistaken economy of his master. The pig is naturally averse to foulness, but is constantly compelled to wallow in it by an artificial method of treatment. The pig has a natural disposition, prompted by beneficial results, to wallow in moisture; and, if clean water, or mere earthy water be withheld, he will wallow in filth.

Thirdly. Far from being ungovernable, as is frequently represented, the pig, properly managed, is remarkable for tractability of disposition.

The pig is fond of warmth and shelter, and is exceedingly sensitive to changes in the degree of temperature or in the state of the weather, of which he is one of the most sagacious soothsayers in nature. The nervous organism which provides for the senses of contact and scent, is admirably developed, and, next to the dog, the pig may be said to possess the most perfect structure in respect of the olfactory apparatus, whereby, with the assistance of a peculiar construction of snout, he can pursue the search after his *natural articles of food*, which *consist chiefly* of roots.

Fruit may be ranked with roots as the natural food of the pig; he is also herbivorous and graminivorous in the general acceptation of those terms, and has, by artificial treatment, become carnivorous, to a certain degree, as well. The method of management adopted towards him in his domesticated state has in fact rendered him capable of subsisting and thriving variously upon food selected from the most universal repertory.

The commercial value of the pig is well known to consist in the flesh and its products; and the peculiar merits which may be attributed to him, in respect of the formation of flesh, may be included under the economy which may attend his feeding, from the fact, that he can live and thrive upon refuse which would otherwise be lost altogether; the *less degree* and *complication of disease to which he is liable;* the abundance of the manure derived from the sty, which is peculiarly advantageous for horticultural purposes; the small outlay required to house and rear him; and his very prolific powers of propagation.

The sources of profit arise, *first*, from the quality of the flesh and its products; secondly, from the aggregate quantity or weight; and, thirdly, from the combination of the two.

95. Of the Various Breeds of British Swine and their Respective Merits.—In the United Kingdom we may number more than twenty different breeds of pigs, attributable to particular districts and particular localities. Many of these, however, are very closely analogous in every respect, and the distinction between them consists rather in the name than in the reality.

Of all these, one of the best and most profitable may be identified in what is called the *Berkshire* breed. It possesses all the merits of hardihood, economical feeding, making flesh quickly, and yielding bacon of a very superior quality, and of being remarkably prolific in respect of the brood. This breed has no bristles, the legs are short, the flanks broad and deep, the back very full, the hair scanty, rather curled, and very thin; the color generally yellowish, verging on brown, interspersed with darker spots; the ears are erect, and are distinguishable by the long hair which surrounds them. The frame generally conveys the idea of being well knit together, firm and close, the jowl deep and thick, and the neck short and well carried. The Berkshire breed has yielded hogs of an enormous weight, and of a very superior quality of flesh.

We may also enumerate the new Suffolk breed (which has been modified by the infusion of a few of the better Lincoln characteristics), amongst the profitable breeds of pigs. They fatten readily, and yield a peculiarly-delicate description of flesh.

The breed, known by the distinctive name of the *Old English Breed*, has also one of the staple merits, namely, that of being immensely prolific; but beyond that, we may safely affirm, that we have failed in discovering sufficient grounds either for admiration or approval. It is an ugly, ill-shaped, lanky, spare-framed beast, of voracious and wasteful appetite, and but little inclined to make good sound flesh.

Amongst the breeds which are remarkable for the peculiar delicacy of the flesh, may be included that of Essex (the improved Essex breed), generally black, but sometimes black and white. This breed is also famous for fertility; but we have reason to complain of the many instances in which the Essex sow fails to rear her young, so that the large litters dwindle down to very small ones before they become available for the market.

There is also an improved breed attributable to Yorkshire, and engendered by the admixture of some share of Lincoln blood, which has been found far more profitable than the old raw scrambling breed, called the Yorkshire breed.

Many breeders have contended for the superiority of the Lincolnshire breed over any other variety of the British hog, and have even pronounced it superior to that of Berkshire. And, indeed, if it be not entitled to the priority, it is certainly but little second to the rival race. The Lincolnshire breed is whiter. It is as remarkable for the abundance as for the very superior quality of the flesh, and has been found one of the most profitable of teeders.

The skin is very fine, and of a beautiful pink hue when the pig is in health, and the hair and bristles are alike very thin.

We may also mention some new varieties which are attributable to the judicious crossing between the *delicate Chinese breeds* and the coarser British breeds, already possessing desirable characteristics. Some very admirable stock has been derived from the Chinese and Lincoln, and from the Chinese and Essex breeds, as well as from a cross with the Berkshire, by which an increased tendency to feed profitably and fatten quickly has been obtained, as well as a peculiar delicacy of flesh and fineness of grain.

The Irish breed of pigs, hitherto coarse, ungainly, and ill-knit, owes much of the improvement which has been observable of late years to the remarkable qualities of the Chinese pig, and of the more delicate

English breeds upon which the latter had been grafted. But even now it is very questionable whether the most improved Irish stock can equal the small rough but profitable race which has been traced to the mountainous districts of North Britain and to the adjacent islands. This breed has been found remarkably susceptible of improved management and food, and has been fed with considerable success and profit more to the southward; the flesh being of a very superior quality, and by no means scanty in proportion to the natural size of the animal.

96. Physical Construction and Adaptation of the Pig.—The peculiar adaptation of the pig to his vocation may be readily distinguished in the mechanical construction of the snout, teeth, and stomach.

The Snout.—The snout of the pig, in its admirable construction, serves a double purpose, namely: first, it is provided with a very considerable development of olfactory apparatus, terminating in an infinite ramification of delicate nerves about the mucous membrane of the nostrils at the extremities thereof, whereby he is enabled to search for and detect his food, even if it be buried amongst offal or refuse of powerful odor; and, secondly, it is furnished with a peculiar combination of levers in the construction and connection of the bones, terminating in a narrow extremity, and in the connection, agency, and action of their adjacent muscles, whereby it possesses extraordinary strength and capability for the exhumation of such food as has already been discovered with the aid of the olfactory apparatus.

The Stomach consists of an arrangement rather akin to that of mankind, and is therefore adapted to the mixed nature of the food which it has been subjected to receive. It is also admirably adapted by its superior simplicity to the apparatus of many other animals, to relieve itself of any obnoxious matter of which it may become the recipient in its promiscuous pursuit.

97. The Teeth; their Adaptation, and their Indication of Age.—Number and situation of the teeth at birth:

Molars or *grinding teeth*—2 on each side above (4), and the like number below (4), ...	8

Number and situation of the teeth at or before sixteen weeks after birth:

Molars or *grinding teeth*—as above, ...	8
Incisors or *cutting teeth* (*temporary*)—2 central above (2), and the like below (2); two on each side above (4), and the like number below (4), ...	12
Tusks or *canine teeth* (*milk teeth*)—1 on each side above (2) and the like below (2), ...	4
Total at or about sixteen weeks, ...	24

Number and situation of the teeth at or about six months old:

Molars or *grinding teeth*—as above (8); 2 new fore teeth and 1 back tooth on each side above (6), and the like below (6),	20
Incisors or *cutting teeth*—as above,	12
Tusks or *canine teeth*—as above,	4
Total at or about six months,	36

Number and situation of the teeth at or before the completion of the eleventh month:

Molars or *grinding teeth*—as above (20); 1 new back tooth on each side above (2), and the like below (2),	24
Incisors or *cutting teeth*—as above in number, *four* (viz., two above and two below at the corners), however, now being *permanent teeth*,	12
Tusks or *canine teeth*—as above in number, being now *permanent teeth*,	4
Total number by eleven months complete,	40

Number and situation of the teeth at or before the completion of the third year (sometimes as early as twenty-five months):

Molars or *grinding teeth*—as above (24); 1, and the last, new back tooth on each side above (2), and the like below (2),	28
Incisors or *cutting teeth*—as above in number, the *whole* being *permanent teeth*,	12
Tusks or *canine teeth*—as above,	4
Total number, or the complete set of the adult animal, perfected at or before three years old,	44

This progressive development of the complete provision of the mouth, as has been observed, however, comprises the formation and appearance of two *distinct* though *blended* sets of teeth, viz., the *temporary* or *milk teeth*, and the *permanent* or *adult teeth*.

The milk teeth comprise the following:

Incisors or *cutting teeth*—2 central above (2), and the like below (2); and 2 on each side above (4), and the like below (4),	12
Tusks or *canine teeth*—1 on each side above (2), and the like below (2),	4
Total number of the *milk teeth*,	16

And these milk teeth are progressively cast and replaced approximately in the following order:

At or before the completion of thirty weeks after birth, the corner incisors of the upper jaw are replaced by two similar *permanent teeth*.

At or before the completion of forty weeks after birth, the corresponding teeth of the lower jaw are also replaced by the *permanent* substitutes.

to observe their disposition to nestle and huddle together, to congregate in warm and sheltered corners, and to bury themselves in the litter when that is dry, *clean*, and plentiful.

The Sties.—For these reasons the sties should always be well sheltered from bleak and searching winds, and surrounded, if possible, on all sides by firm brickwork, at least breast high, but leaving sufficient space to admit of a free circulation and access of fresh air. The necessity for a considerable elevation in the walls is well known to those who have been plagued with breeding sows; for they are, in particular, addicted to scrambling out of the sty, and either straying away, or finding access to adjoining gardens, for the purpose of muddling at discretion for potatoes, &c. And the importance of providing adequate substance in the brickwork will soon be discovered, where the pigs have a disposition, notwithstanding the *rings*, for muddling away everything about them; in which case, if the walls be not sufficiently substantial, and above all, *well ridged*, or the pavement be loosely and irregularly laid, the whole will soon be reduced to ruin. It is not an unimportant particular to add, that the use of coal ashes in the mortar should be avoided, because some pigs have a great inclination to consume the ashes, which serve to whet the teeth, &c., &c.; in which case they will perseveringly muddle away the interstices between the bricks, in pursuit of the small pieces of cinder which are imbedded therein.

The shed attached to every sty should be thoroughly well roofed, having only a sufficient orifice to admit a man for the purpose of cleaning it out. Thatch is, as a general rule, preferable to any other description of roofing, not only because it is warmer in winter, but because it is a greater safeguard against the heat of the sun in the height of summer.

Pigs, although fond of warmth, cannot bear an excess of heat, especially not that of a scorching summer sun, wherefore the sty should always be protected, if possible, by trees, which can afford a refreshing shade without interfering with ventilation.

99. The Litter.—In order to enhance all the better qualities of the flesh, due regard must be paid to this particular. If due attention be really paid to the litter, there will be far less wasteful consumption, and the sty will be constantly *clean;* for (what is no slight argument in favor of the natural cleanliness of this animal) the pig will never deposit dung in the nooks which he reserves for rest, but always in some particular spot set apart for this purpose. *All foulness should, therefore, be removed every day,* plenty of clean litter being always left, wherein the pigs may indulge their love of comfort by burying themselves. Pigs which are carefully tended in these respects, are not only less wasteful as regards the litter, *less liable to disease*, and yield better manure, but they are more *kindly and economical feeders*. Some breeders of pigs, who have devoted themselves to the improvement of their stock, rather for pleasure than profit, have gone the length of resorting to washing, and otherwise cleaning the pigs, and with such beneficial results as to have afforded an additional testimony respecting the love of cleanliness natural to the pig. *The habit of allowing a dense deposit of manure and decomposing litter to remain in the sty, under the false idea of increasing and improving the manure, is one of the most foolish of vulgar errors.*

100. **Feeding.**—The goodness of the food depends upon its comparative capability of engendering sound flesh and good fat. But the nature of the food depends very much upon the method in which the pig is kept. The ordinary farm pig seems to feed upon whatever he can pick up in the straw-yard, or in otherwise worthless pastures, until after harvest, when the whole herd is driven out into the stubbles, whence the *fattening* which is expected of them is derived. Nor is this so imperfect a method as it may appear. The pig will fatten quickly and well upon the waste grain, &c., which can be gathered from the stubbles, but pork which has been fattened in this way is never well interlarded like that which has undergone a slow, regular, progressive course of treatment in the sty. Under these conditions, the pig will, with great advantage, consume a quantity of refuse vegetables, and even of weeds which are obnoxious to the gardener; such, for instance, as the sow-thistle.

But our attention is rather directed to artificial or sty feeding, as that specially appropriated to the fattening of pigs. And here we find several varieties of food, viz., grain and its products, such as entire or bruised grain, rice, meals, grains (brewers' or distillers' residue): green meats, including the grasses of permanent pasture, clover, sainfoin, lucern, tares, pea-stalks, waste vegetables, vegetable roots, waste fruit and nuts, and acorns, &c.; dairy refuse, or residue, including sour milk, whey, &c.; washes, including the general waste of a household* (*which, however, should be decreased proportionately to the products of*

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* Animal products, such as the liquor from boiled meats, should be sedulously excluded from the hog-wash; and those who have the care of pigs should take precautions to prevent the admixture of such ingredients in the refuse-tub, or should abstain from using such refuse when they cannot rely upon its integrity in this respect.

grain and the dairy refuse, as the progress of fattening is to be pursued in earnest); and cooked vegetable roots and grains, including potatoes, carrots, parsnips, sometimes beets, bruised pease, and rice, &c.

The method in which food of this kind is administered is most essential, viz.:

1. The trough in which the food is placed should always be scrupulously clean, long enough in comparison to the number of pigs, and so parted off, that if there be several they can all feed without the hazard of some being driven away by the more greedy and the stronger pigs.

2. The food should be given frequently, and in small quantities at a time; six times a day, beginning with daybreak, and ending with sundown, in summer, or four times a day between the same periods in winter, is not too often to feed pigs confined to the sty.

3. The food should be administered at very regular hours.

4. In fattening pigs, the species of food hereafter stated as holding the first rank, should be reserved until the latter period of fattening, and the food should be gradually rendered more generous and more dainty as the fattening advances.

5. The food should be as much varied as possible, within the compass of the most advantageous articles, as the greater degree of obesity renders the appetite more fastidious.

The relative value of the above-mentioned articles of food, as regards the fattening of pigs, may be stated in the following succession:

1. Second to none, not only in respect of the rapidity of its results, but also of the quality of the meat, we may name the dairy refuse or residue, such as whey, waste skimmed milk, sour milk, &c., wherewith we may mix barley-meal, sharps, bran, oatmeal, bruised or ground pease, &c.

2. The residue or refuse of starch, thinned with water.*

3. Potatoes, boiled, and well beaten into a smooth pulp, and afterwards mixed with any variety of meal, and, if necessary, thinned with water.

4. Boiled and well-smashed carrots or parsnips, diluted with the liquor in which they were boiled.

5. Bruised grain, or meal of grain, such as *barley*,* oat or wheat meal, sharps, pollard, &c., liquidized with water.

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* Even in England, where it can be grown with anything like success, Indian corn has been found superior even to barley for the fattening of pigs. Indeed, it possesses the purely nutritive properties to a higher degree than any of the indigenous grain of our climate; nor would it be such costly food, if a little more attention were paid to the situations adapted to it, and to the method of its cultivation.

6. Pease. In moderate quantities pease are often very advantageously given whole; they are generally, however, better if bruised, and still better if boiled, beaten up, and diluted with their own liquor.

7. Entire grain of the kinds above enumerated.

8. Acorns and other nuts, which form a staple article in some districts, in which case the pigs are generally allowed the range of a forest to gather their food.

9. Green meats, such as those described, as well as turnip-tops, lettuce and cabbage leaves, and the like, should, even in close sty feeding, be tendered from time to time, and will be found to act beneficially upon the system generally, whereby a new and increased zest will be given to the flagging appetite.

10. An ample supply of pure cold water, in a separate and clean trough, is indispensable.

The ordinary course of nature points out the most advantageous season of the year for fattening pigs. In their wild or less cultivated state, it is obvious that they would gather but little food calculated to generate fat until after the season of harvest, and whilst the nutty fruits and saccharine roots were abundant and in sound maturity. In conformity with the natural course of things, we shall find that pigs are fattened better, quicker, and more economically, between the months of August and December, than at any other time of the year.

The Ringing of Pigs.—Some artificial resource is evidently requisite, not only on account of the damage which an unringed pig will be constantly doing, when he has the full power of the snout at his disposal, unshackled and unrestrained, but also on account of the material interference of his constant and self-inflicted labor, with the progress of fattening. At a very early age the old custom has been to perforate the extremity of the snout, from each nostril, and to insert a wire ring in each orifice. The more modern and improved practice has been to deprive the terminal structure of the snout of its power, by making such an incision as to separate the ligaments, &c., of the terminal bone, whereby the extremity of the snout is disabled.

Preparatory Treatment, and Killing of Pigs.—With respect to the preparatory treatment, the pig having been ascertained to be in good health, and perfect condition, little need be said, except the injunction, to withhold the food for an entire day previously, or to kill the first thing in the morning, and before any food has been administered. With respect to the killing of pigs, the inhumanity of the prevalent method of exposing the animal to the prolonged agonies of a lingering death, is so obvious, that any modification which could provide against this mischief would be worthy of notice. The most reasonable proposal is that of plunging the knife in such a manner into the throat as to separate the main artery. This, however, requires some experience; for very few of the ordinary bunglers who set themselves up as able managers of pigs would succeed in striking accurately, in many instances, in cases in which the animals were exceedingly fat.

101. Of the Breeding, Rearing, Weaning, &c., of Young Pigs.—The general merits of both the male and female from which we are desirous of propagating, for purposes of breeding, consist, as in all other domestic animals, of all the desirable qualities which are sought for in the offspring, and which are summed up briefly thus:

1. Kindly and economical feeders, and ready fatteners, yielding fine and delicate flesh.
2. Prolific parturitions.
3. Good nurses, and consequently successful in rearing their young.

We should also seek for the following particular characteristics:

102. The Boar.—In the boar we should look chiefly to construction, and to the consistency of such construction relatively to the breed of the sows, the locality, climate, and general circumstances. One boar, of desirable qualifications, may be deemed sufficient for the service of from eight to twelve sows. He should be between one year and four years old; and should be separately confined with the sows, *one by one*, and for a sufficient time only. If, however, the offspring of the first intercourse has been deficient, in any important points, and that the characteristic merits of the sows be undoubted, this should be a sufficient reason for setting him aside, and for ceasing to breed from him.

103. The Sow.—The sows reserved for breeding, out of each litter, should be selected from amongst the most kindly of a *prolific* brood. There will be no incentive to retain young breeding sows from a scanty litter of less than eight pigs; nor should we any longer retain a sow for breeding purposes which has not farrowed at least eight pigs at her first parturition. No sow should be retained for breeding purposes which is not furnished with at least ten teats; all others should be spayed,* and reserved for fattening. A sow which has once been guilty of rolling on her young, which has suffered a difficult labor, has *proved a bad nurse*, has failed to rear her young without any distinct circumstantial cause, is in the habit of eating the after-birth, of devouring flesh of any kind, &c., &c., should at once be set aside for slaughter; she is utterly unfit for breeding from. A sow which has been delivered of a prolific litter at her first parturition (say of 10 pigs), and which has proved an excellent nurse at that time, and has reared her young successfully, acquires considerable value. A sow of really good qualities as a breeder, should rear at least two litters well every year, and may often furnish a third; but no sow should be retained for breeding more than three successive years. The average duration of pregnancy may be stated at nineteen weeks, although there is a variation of more than three weeks in this respect, between very young or very debilitated sows (which go a shorter time), and vigorous and matured sows (which go longer). Every sow ought to be between ten and twelve months old, when first applied to breeding purposes, although, as a general rule, few sows are so old. If possible, time should so be measured that the two yearly litters may be farrowed as near the end of February and August (or a week or two earlier in both instances) as possible.

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* The general period of castration and spaying is about four weeks after birth.

104. Pregnancy and Parturition.—The first pregnancy requires to be more closely watched, to prevent the untoward consequences of inexperience, than that of subsequent litters. A separate sty should be appropriated to the sow; the litter should constantly be kept *clean*, fresh, and *dry;* the food should be good, but not too copious; and the first appearances (if any) of fatness should be assiduously obviated; unwholesome and unsubstantial food, however, should be eschewed, as also a profusion of extremely succulent vegetable food, whereby, as by accidental causes, abortion is occasionally produced. The disposition to premature and imperfect labors is by no means so frequent amongst sows as amongst the animals already enumerated, but may be preobserved in the presence of general symptoms, such as those already described elsewhere.

But if the natural parturition is at hand, in due course, we shall notice indications of very severe anguish; the teats quickly becoming much enlarged, the back apparently borne down and bending at the drag of the weight of the belly beneath, and the belly being much lowered and distended. As labor actually comes on, we should watch to remove the young, one by one, as fast as they are born, until the whole is over, and the afterbirth has been cautiously removed. The young pigs should, in the meanwhile, be carefully preserved from the access of cold air, and should be carefully replaced with the mother as soon as the operation is over.

No sooner is the litter fairly delivered (the young being replaced) than we should return to concentrate our fullest attention on the sow; for it is now that a little neglect, in respect of her food, may not only prove of serious detriment to her, but may also react fatally upon the young pigs. The greatest precaution should be taken to accommodate the nature of the food to the condition of the sow; whereas, also, if the milk be not sufficiently plentiful, or of good quality, we should begin as soon as possible to teach the young pigs to feed by themselves, or we should even have recourse to artificial food, after having separated the sow and pigs. The utmost regularity, small quantities at a time, and increased frequency, should be the particular subjects of attention as respects feeding. We should also watch the vascular action, and accommodate the nature of the food to the condition of the body. Excessive weakness will indicate restorative substantial diet, and the presence of fever, thin diluted cooling mashes, such as those of oatmeal and whey.

105. The Weaning and Rearing of Young Pigs.—For a double reason, involving the benefit of the sow as well as of the young pigs, it is desirable that the young should not remain too long dependent solely upon the teats for support.

Milk, slightly warmed, is the earliest substitute for the natural food of the period of suckling, and this should be administered to the young pigs at periods varying from ten to twenty days after birth; but the mother's diet should yet continue equally generous, if not more so, and should not be diminished until from thirty to forty days after birth, at which time the process of weaning may be commenced in earnest. From the time at which artificial food is first tendered to the young pigs to that when weaning fairly begins, we may continue to increase the quantity and consistence (by adding more and more meal) of the artificial food; having parted off the sty in such a way, with narrow rails, that the young pigs may be able to run over the whole extent, but that the sow may be excluded from a certain part, in which small and flattened troughs should be placed to contain the artificial food of the young pigs. When once the weaning has been commenced in earnest, we must proceed to separate the young pigs from the sow for a longer space of time, diminishing also the frequency of their access to the teats by slow degrees, whilst *the food of the sow is simultaneously withheld, as regards the full indulgences allowed during the trying period of suckling*, and is rendered less stimulating or generous, whereas, at the same time, *the food of the young pigs is being rendered day by day more solid and substantial.*

SECTION VII.

106. Of Poultry.—The importance and productiveness of poultry appear to be much overlooked in this country, whereas they are comparatively in high estimation elsewhere. There are only a few districts in Great Britain where fowls of any kind are admitted to constitute a staple commodity for the market, and even then this consideration is confined to one or two varieties, viz., geese and turkeys generally; whereas, nowhere in the United Kingdom do we meet with the swarms of domestic poultry which hover about the homesteads of Picardy. The common domestic fowl, nevertheless, yields two very delicate, wholesome, and nutritious materials to the provision market,—the flesh and the eggs, and possesses additional value, from the appropriation of the feathers to various branches of manufacture.

The Common Farmyard Fowl is divided, as it is bred in this country, into seven or eight varieties, and these again into a series of subordinate breeds, attributable to particular localities and the experiments of particular fanciers. Of these varieties, some are, more or less, purely foreign fowls, which have been introduced under the idea of improving the native stock. Such is the *Spanish fowl.* This breed is provided with black plumage, the bare parts being also black, and the comb and gills being large and very red. The flesh is much in request for the table on account of the whiteness and fineness of grain which characterize it, and the fowl is advantageously adapted for this purpose, owing to its size, in which respect it is second only to the *Malay fowl* and its combinations. Such also is the *Malay fowl,* the largest of the varieties known amongst the poultry of Great Britain; the eggs are very large and abundant, and possessed of peculiarly nourishing properties—a remark which applies also to the flesh; but the latter does not possess the qualifications which constitute the fitness for the table; it is uncertain, never fine, and has always a darkish hue. The plumage is dark brown, with an occasional ray of yellow; the legs are long. As another distinct variety amongst the foreign fowls which have been introduced or naturalized in this country, we may name the Poland breed, whose merits, in the majority of respects, excel those of either of the two former, but which is not quite so large and much less gaunt. If anything, the flesh of this breed is more dainty than that of the best of our indigenous fowls. They fatten well and readily, and they yield an immense and never-failing profusion of eggs, which, however, perhaps as a natural consequence, are less in weight, thinner in shell, and sometimes considerably less charged with the peculiarly nutritive properties than those of the generality of our poultry. Like all other fowls which are constantly laying eggs, the Poland breed are averse to hatching them, and it is very rarely, in comparison, that they can be brought to devote themselves patiently and punctually to the offices of incubation. The better way, therefore, is not to depend upon them at all, but to place their eggs at once beneath a steady sitter. The characteristic features of this breed consist in their possessing more rotundity, obesity, and shortness of limb than either of the foregoing; in the glossy blackness of the plumage, relieved only by the mingled white and black, or even by a predominance of white in the tuft which overshadows the crown. In the place of a comb there is a circle of small fleshy points.

107. Amongst the Indigenous British Breeds, we cannot but afford the first rank to the *Dorking fowl.* This breed is easily distinguished by a white plumage of a peculiar cream tinge, or sometimes of a sandy gray, with which, however, there is no admixture of feathers of any other color; by the presence of a fifth claw on each foot; by the shortness of the legs, in comparison to the size of the bird, which is next to that of the Spanish fowl; and by the expansiveness and rotundity of the shape. The flesh is *deep*, sound, delicate, and fine-grained, and partakes of the creamy hue of the plumage.

The common *Dunghill fowl* cannot be numbered amongst specific breeds, inasmuch as it partakes in general of every variety, as is evinced in the endless variety of plumage, form, size, qualifications, &c.

The *Game fowl* may rather be cited as the *beau-ideal* of a fancier than on account of any productive qualifications; for, although the flesh be unrivalled in whiteness, delicacy, and flavor, it is but a scanty layer, and still more incompetent of being reared successfully, and in numbers. The *Game fowl* will be readily distinguished by the ruddy, brilliant, and dazzling hue of its plumage, by the admirable symmetry of its shape, by the rapidity and activity of its movements, the fierceness and intolerance of its temper, and lastly, by the beautiful cleanness, slenderness, yet nervous and sinewy construction of the limbs.

Next in importance amongst British poultry to the Dorking breed, we may mention the *Bolton gray breed*, remarkable for the abundant supply of eggs, and for the whiteness of the flesh. It is appropriately named from its peculiar mottled-gray plumage, and distinguishable for the invariable snow-white fold in the plumage on either side of the neck. The interspersion of black spots throughout the feathers is more or less frequent, and the tail is generally marked with black rays.

The original breed, known by the name of *Shackbags*, has been insensibly merged into new varieties, principally by the introduction of *Malay blood*, as also by crossing with other breeds, and is, we believe, no longer to be found in its integrity.

The pure *Bantam* breed, as remarkable for the yield of eggs, as for persevering incubation, besides the very superior quality of the flesh, has earned for itself, however, a reputation rather with the fancier and rearer of game (for whose purpose it is unrivalled), than with the more mercenary peasant.

108. The Breeding, Rearing, and General Management of Poultry.—*Selection of Breeding Cocks and Hens:* The breed from which these should be chosen is generally a mere matter of taste; but for purposes of profit, it is clear, that the selection should be made from such as possess most of the merits, and as few as possible of the defects, which are attributable to poultry. The cocks should, therefore, be possessed of high-mettled courage, and even of a savage disposition; the cock which has not the courage to offer a bold front, even against odds, is ever deficient as a breeder. The breeding cock should also be of such a construction as has been attributed to the characteristic formation of the most profitable breeds: the body should be long and deep, the legs short, the breast broad and expansive, and rotundity should be selected rather than gauntness. Both the cocks and the hens should be healthy and vigorous, as evinced by the bright crimson hue of the comb and gills. Amongst the hens we should combine, in the aggregate, what is rarely combined in individual birds, by providing an adequate proportion of *prolific layers* and of *patient and persevering incubators.* We should avoid yellow-legged, or large-combed fowls as a general rule, and we should pay particular attention to the indications of age. As breeders, cocks and hens alike, of about two years old, should be chosen; or even of three years old. Fowls which have not completed the second year are not advantageous breeders. But the advantage of selecting a first stock at the earliest age when they are good and profitable breeders, consists in being provided with young substitutes, of adequate age, as the original stock declines; whereas, if we begin by selecting fowls in their prime (three years old), we shall not have young stock to replace them until the first stock has ceased to be eligible for breeding purposes. As the fowls grow old, we may observe the gradual fading of the bright redness of the comb until it changes to something of a dirty yellow-red or brown-red; we may also distinguish the increasing harshness, prominence, and size of the scales which cover the featherless parts of the legs; whilst the length of the talons, and the hardness, crustiness, and dull hue of the beak, afford additional indices of age. The comparative number of hens, as respects the cocks, should be as six to one. Some breeders prefer even a greater proportion of cocks, but we have in general found, that the excess was worse than the deficiency, and the proportion of eight to one will more frequently prove advantageous than that of four to one.

Selection of the Site, Soil, Conveniences, &c., for the Breeding and Rearing of Chickens.—The appropriateness of the situation should rule imperatively with those who seek for profit from the rearing of chickens. A dry, well-drained, and elevated situation is the best adapted for this purpose; and when the situation in which it is proposed to breed them is otherwise,—as low, damp, ill-drained, stagnant, or of a heavy loamy soil,—either some artificial provision should be made to provide against the ill effects of such a locality, or else the project should be abandoned. Fowls thrive best upon dry sandy or gravelly soils, and also upon elevations where chalk prevails. Districts which are adapted to the breeding of sheep are equally desirable for the breeding of chickens. In the absence of an appropriate soil and situation, a spot may be selected where there is a slope of southerly, southwesterly, or westerly aspect, whereupon an inclosure of strong and lofty fences may be erected, the bottom of the fences being sunk into the ground, to prevent the wandering of small chickens, and protected by the additional sinking of broken glass, and other hard and keen substances beneath the foundation, a precaution which may serve to exclude such vermin as would find means to burrow beneath, to get access to the fowls, whilst the upper ridge of the fences should also be well armed with tenter-hooks, to prevent access from that quarter. The *soil* should also be removed to the depth of two feet or more, and replaced, first by a considerable quantity of bricks and other broken building materials; and above these by layers of chalk and fine gravel, the upper surface being well hardened, and laid perfectly even to facilitate the proper cleansing of the inclosure. Heaps of fine coal-ashes or sand should be placed in some corner of the inclosure, whereon the fowls may dust themselves. From the western extremity of the inclosure to the northward, and thence to the eastward, that is on the side extending from the east by the north to the west, the sheds or roosts should be erected. Thus they will have a southerly aspect. They should be sufficiently lofty, thoroughly well covered and inclosed, and rendered proof against the whether or not she will abandon the nest. And if she then appears to persevere, it will be time enough to provide her with an adequate number of real and sound eggs for incubation;—because, otherwise, if the hen should be fickle, all the eggs placed under her at first will be addled. As hens grow old, and do not *moult* until late in the season, or continue very long in the process of casting and changing their feathers, they become comparatively valueless, either for laying or sitting, inasmuch as they never lay except in the season of abundance, and then only a few eggs; and as, moreover, they rarely possess sufficient *breeding energy* to hatch or rear their chickens.

The eggs which are reserved for breeding should be taken from the laying nests when quite fresh, as nearly uniform in size, &c., as possible, and exhibiting no flaws or irregularities in the shell. They should also be selected from amongst the full-sized eggs, lest they be those of the first season of pullets, which are generally smaller. They should not be kept longer than from twenty-one to twenty-five days, and, during that time, should be immersed in bran, and kept in a dark and cool place. Nor should we begin to reserve eggs for breeding until the spring is well advanced, lest there be none amongst the hens which are disposed to sit. Being provided with a stock of eggs for hatching, we will presuppose that some of the hens betray a disposition to sit, and have been proved, by the method above indicated, when we may select as many as can be well covered by the hen, carefully marking them with a pen or pencil, so as to detect any interloper (which may be deposited either by the sitting hen, or during her absence), and we may then place them in the nest which the sitting hen has already appropriated. There is a prejudice in favor of an odd number of eggs, eleven being about the average number. If, by accident, any of the eggs be broken in the nest, they should be removed, together with the adhering straw, &c., as soon as the fact is observed; and if the others have been rendered glutinous and sticky, they must be very carefully washed with water of a temperature of about from 90° to 110° of Fahrenheit.

The nests appropriated to the sitting hens should be constantly and thoroughly cleaned so long as they are unoccupied, and should be expressly cleaned and provided with fresh short-cut straw or hay, before the eggs are placed under the hen. But, in all these operations, it is necessary to observe as much gentleness and expedition as possible, lest the sitting hen be driven away from the nest to which it is desired to confine her. A sufficient supply of fresh grain and clean water should then be placed within the reach of the hen, in troughs appropriated to in number, it should be stated, were observed, one and all, to be more tame than the rest; and, as it were, to seek the protection and intervention of their attendants. Two of them became entirely domesticated, and were oftener seen with the inmates of the house, by whom they were pampered, than with those of the dove-cote, by which they appeared to be harassed.*

The Hatching.—In proportion to the difficulty, danger, and inadequacy of mechanical interference in the liberation of the young of animals from their prenatal condition, we remark the decrease of casualties attending such liberation naturally performed. Few animals which fall within the province of interference assigned to the reason of man, are subject to less difficulties at birth than fowls; whilst few, also, are so little susceptible of a practical and beneficial intervention.

With respect to animals whose parasitic existence (fœtal) is completed before the completion of the animal organism; that is, those which are *twice born*—once, in the emancipation of the *egg*, and again, in the liberation of the young animal from the *egg*—it is a strong argument against the artificial interference of man, that they are not even susceptible of the interference of their own kind.

The bird, of whatever kind, owes its final introduction into the animated world to the efforts of its own strength and energy alone. Sufficiently developed to dispense with its temporary inclosure, the young bird lustly hammers at the shell of the egg, to start into actual existence; and even a blow from the beak of the parent bird, guided and prompted by the natural instinct and affection for the fruits of its own labor, suffering, and privation, would endanger the life of the offspring.

The cases are, therefore, very rare, *although they sometimes occur*, when the interference of man, with the manifold appliances of his reason and ingenuity, are needed, or can avail to facilitate the completion of this second birth. In these rare cases, we may sometimes resort to the expedient of breaking the shell of the egg, but this must be done with great care, and very gently. The signal for such a course will be the suspension of further strong efforts on the part of the incarcerated chicken, after a struggle of many hours' duration. In the majority of cases (*i. e.*, taking the average), the chicken does not effect its release until after twelve hours of labor, although instances are not wanting of the hatching being completed within periods varying from one to twelve hours. Whereas, on the other hand, these efforts have continued ineffectually for nearly two days. *When the period of hatching is about due, according to our estimate, we should pay every attention to the nest.*

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* This is a case illustrative of the deficient hardihood of animals, attributable to fœtal or prenatal circumstances, and also of the extraordinary jealousy which animals in the state of nature, or in an approximate condition, entertain towards those which have become the objects of peculiar care and attention, or which are petted and pampered.

A more frequent occurrence of the beneficial interference consists in aiding the removal of the membrane which incloses the chicken *within* the shell, and which will not unfrequently occur, owing to the inspissation of the size or white of the egg in which the chicken floats, by the heat applied during incubation, and the consequent adhesion of the membrane. The artificial removal of this species of skin, or film, can be effected with a little moderately warm water, which will serve to liquefy the *size*, and consequently to release the membrane on the one hand, and the chicken on the other.

As fast as the chickens are hatched they should be removed, deposited in a nest of wool, in a very warm situation, and there retained until the contents of every egg are extricated, when the hen must be cooped, and the chickens may be restored to her. No food should be given to the chickens (or, at least, not for twenty-four hours) until they are replaced. Nothing but sheer bruised grain, such as groats, should be offered to the chickens for some time, and the water with which they are furnished should be placed in such vessels as to prevent the chickens from falling into it, or becoming immersed.

The coops of different broods should be as far removed from each other as possible; and after the first week, the hen may be liberated from the coop in *fine weather*, as soon as the dew is dried up, so that the hen and chickens may wander in search of their own food; but they should never be allowed (if it can be prevented) to be exposed in wet weather, or to run loose until the ground is dry. The chickens will continue with the hen until they are able to provide for themselves, unless, indeed, the hen abandons them; in which case, if they be seen to mope and pine, and fail, they must be carefully treated and reared by hand for some time longer. There is a peculiar wailing, painful, disconsolate chirp, whereby a young chicken signifies its sensation of helplessness.

109. The Feeding of Poultry for Market or Slaughter.—The chief considerations in respect of feeding refer:

1. To the nature and quality of the food.
2. To the quantity.
3. To the method of feeding, and the contemporary general treatment.

1*a*. Without entering upon the consideration of the peculiar crotchets of particular breeders or fanciers in this respect, it will suffice to enumerate the articles which are most serviceable for this purpose; namely, entire grain, especially *barley* and *wheat*, and sometimes, also, oats, when they do not purge; malted or sprouting barley, grains, and other like products; meals of grain, especially of barley and wheat; animal substances, such as the ants' eggs; or even pullets' eggs, boiled hard, and chopped up; or, as recommended by some persons, unadulterated greasy animal substances generally. We may also name certain green vegetables and grasses, as conducive to the advantageous feeding of fowls. With respect to the quality, we have always found that there is greater economy as to actual cost, and that the results are infinitely more advantageous from using the best and heaviest grain, than from the use of refuse or tail corn, such as is commonly appropriated to the uses of the poultry.

2*a*. With respect to the quantity of the food administered, that must be governed chiefly by the inclination of the fowls; generally speaking, the more the fowls contrive to consume the better.

3*a*. The method of administering the food for fattening purposes resolves itself into the following proposition: 1st. The liberty to ramble in search of food, especially in farmyards, where, at the first thrashing, the fowls instinctively deriving the best of food from the refuse and waste of the barn, will fatten readily, and will yield the finest quality of flesh. 2d. Being confined, either to a section of the inclosure already described under the head of "General Management of Poultry," parted off as a feeding-ground; or being confined to the still narrower circuit of a coop; or even being deprived of light, to render the fowls more tranquil and indolent, and, consequently, less liable to waste a fraction of flesh, or fatty deposit; or again, with similar confinement, by what is termed cramming, that is, *compelling* the fowl to swallow a given quantity of barley or wheat meal, or of such other substance as may be deemed advisable; and lastly, by recourse to the operation of castration, with a subsequent similar course of feeding. The operation in question constitutes the variety of domestic fowls popularly called capons; a species of refinement on the ordinary treatment of poultry, to the employment of which three or four districts in England have undisputed claims.

If, however, young fattened chickens be in request, the best and true method of feeding consists in sustaining the condition which the chicken usually attains under the protection, and with the assistance, of the parent fowl, by unintermitting rich and generous food, *never allowing* *the pullet intended for slaughter to degenerate into leanness,* because such degeneracy, however temporary, will most materially deteriorate not only the quantity of the flesh, but the regularity with which it is interlarded, and, consequently, the juiciness and flavor.

OF DUCKS AND GEESE.

110. A Few Remarks respecting them which are not applicable to Poultry Generally.—Ducks, like Guinea fowls, require watching as soon as the laying season sets in, that is, in February, lest they should stray away to conceal their eggs in some secret or inaccessible place.

There are very few varieties amongst the ducks which are bred in this country. Those which appear to be indigenous are either white, as the *White Aylesbury Duck,* or have a great admixture of white or light-colored feathers. The *Rhine Duck,* for which we are indebted to the Continent, when pure, is distinguished by the prevalence of dark colors, and by the greater bulk of the bird. There are not nearly so many varieties of color and marking, produced by hybridization amongst ducks, as amongst chickens; whereas, amongst geese again, we distinguish more varied admixtures of color. Muscovy ducks, which are occasionally found even about the homesteads of very rural localities, are but fancy fowls.

The *Embden Geese* seem to be held in estimation equal to that acquired by the white breed of ducks above named; yet, of late years, they have generally disappeared from the flocks. Geese, in their wild state, are the most uniform in color of any birds; they generally seem to correspond feather for feather. It is strange that, in their domesticated state, the uniformity has been replaced by the *opposite extreme.*

Ducks are miscellaneous and foul feeders. Offal of any kind, flesh, weeds, vegetables, and grain—the insects or small fish inhabiting the water which they frequent, &c., &c., are amongst the articles which they consume. They seem to thrive and fatten near *tan-yards,* where they subsist almost exclusively upon the offal of animals; but their flesh becomes comparatively rank in flavor. Acorns are also found very advantageous for fattening ducks, and they seek for them assiduously in the vicinity of extensive plantations or forests of oak. The best artificial food for fattening ducks seems to consist of mixed food, with the addition of a considerable share of crushed or bruised *oats* (especially) and pease. The meal of these kinds of grain may be considered the best form. *Barley* is to be avoided. The mingled refuse of the household cannot be better appropriated than to the feeding of ducks. Confinement is not preferable for fattening.

111. The Staple Food of the Goose consists of the finer grass of permanent pastures, such as *commons*, waste lands, &c., which, however, should be examined to see that it is free from poisonous herbs, such as hemlock, nightshade, &c., which would destroy the goslings; and situations should be selected where water is not wanting. Besides grass, if geese are intended for high condition and to realize considerable weight, we should supply them twice a day with other vegetable substances, such as refuse cabbage-leaves, turnips, carrots, mangelwurzel, &c. (carefully cut up), lucern, tares, and the like. The range of stubbles, immediately after harvest, will fatten geese as well as, if not better than, artificial home feeding, especially if they have been kept in high condition by the means just described. We may begin to fatten the goslings in the course of the second month, when *green food* should be allowed *only very sparingly*. It may also be added that, where there are only a few geese (or a few on which it is desired to bestow especial attention), we may very beneficially use crushed or bruised grain (as described above in respect of ducks), mixed, if possible, with superabundant milk from the dairy; *malt* and *fresh grains* are highly advantageous as winter food for the geese to *forward them for breeding, and to obtain an early brood so as to be able to rear a second in the course of the same year*. Good pollard, sharps, &c., also constitute very desirable fattening food, or food for goslings during the first three weeks.

The situation of the habitations appropriated to ducks has already been noticed under the general head of Poultry.

112. Breeding.—Ducks are very abundant layers, and continue to lay until very late in the season. The period of incubation with ducks extends on the average over a period of one month, more or less. If watched during the time that they are still laying, it will not be difficult to detect the hiding-places selected for nests, but for this purpose they must be watched at night or at the first dawn of day. The drooping of the belly, and the peculiar waddle of ducks heavy with eggs ready for deposition, betrays them, and if on the water the tail will be observed spread out, and close to the water, instead of being held up. Ducks lay at night, or very early in the morning, and rarely, if ever, after the day is advanced; and when they leave the nest, they invariably collect leaves or rubbish wherewith to conceal the eggs more effectually, a precaution which is also observed by the goose in rarer instances.

According to its size and abundance of plumage the duck can hatch twelve, thirteen, or fourteen eggs on an average, some even more. The proportionate number of drakes to ducks should be as one to five.

The *period of incubation with geese* differs little from that of ducks, the average being a day or two over the month. The relative numbers of the male and female are the same as with ducks. The number of eggs covered varies from thirteen to seventeen.

The *duck, during incubation,* should not be disturbed, but should be left entirely to itself and perfectly secluded. Nor should the brood be meddled with until they are spontaneously brought out by the parent bird, when they should be cooped together upon smooth turf, or, in the case of the prevalence of very wet, cold, or changeable weather, they may better be cooped under cover within the hutches appropriated to them, the tails and the adjacent feathers being cut close. During this period whilst they are cooped, the soundest grain should be freely allowed to the old bird, as well as plenty of dry litter constantly changed. In wet unhealthy weather good meal should be supplied to the brood and the old bird, the earliest food of the brood consisting of *oatmeal.* Ducklings should never be hatched under the hen where there is water at hand; and even when raised by one of their own kind they should be withheld from the water (the mother being confined to the coop) for a period varying from a week to fifteen or eighteen days, according to the state of the weather.

A pan, containing a constant supply of fresh water, should be placed at hand close to the coop. This is indispensable. The coops containing different broods should be far apart.

Geese, as the period of breeding approaches, should be carefully watched.

As early as the beginning of February, when the geese have been well fed on malt, grains, and the like, during the winter, we may notice them collecting straw and apparently busy in providing for a nest when this should be supplied for them. A quiet place should be selected for this purpose, and straw carefully deposited.

During the period of incubation, when all the geese, which are sitting simultaneously (if more than one), are collected in adjacent nests, the natural guardian, namely, the gander, which is ever at hand, will sufficiently provide for their protection and their wants. The early goslings will be hatched in the course of the month of March. The earliest food of the *gosling* should be much the same as that of the *duckling.* For the first fortnight the goose and her brood should be housed during the night and during cold and wet weather, and should be folded in a small inclosure, set apart for this purpose, upon an adjacent grass-plat, as soon as the turf is dry, and the sun high above the horizon. At this early season the brood should be removed to the shelter appropriated to it for the night, at from three to five o'clock in the afternoon. When the goslings are from ten to fifteen days old they may be allowed the full scope of the pasture selected for them with the parent bird, with the addition of the richer fresh food and grain above described; but, unless the season be far advanced, or if the nights be cold, they must still be housed at sunset.

OF TURKEYS.

113. A Few Remarks respecting them which are not applicable to Poultry Generally.—*The Rearing of the Chicks:* During the completion of the process of hatching the chicks must be removed and kept warm until the liberation of all is completed, when, for the first forty days, they will require to be kept under cover with the hen. They will then be fed with a thick mixture of oat or barley meal, and with chopped eggs, shreds of coarse boiled beef (unsalted) being soon added, the latter being strewed about to encourage the chicks to search for their food. Fresh-mown turf may also be afforded to them, but it must be thoroughly examined for the removal of noxious insects and vermin. As soon as they are allowed greater liberty, either by the cooping up of the hen in an open field, or by their being allowed to range abroad, a close watch must be kept over them to prevent their straying away, to which they are very prone, as well as to prevent the hen from straying from them in her natural disposition to wander to a distance without allowing the chicks an opportunity of keeping close to her. In the event of their being sickly, within a few days after hatching, a little crushed malt may be added to their food. Whilst they are kept in confinement it will be necessary to provide for the thorough cleanliness and dryness of the place appropriated to them. Good clean but small shingle makes the best flooring.

Turkeys, it should be observed, are more difficult to rear than any of the other varieties of poultry domesticated in this country, and, therefore, all the precautions already prescribed for other fowls will apply yet more imperatively to these, besides those regulations which are specially adapted to their treatment.

After harvest, and later in the autumn, turkeys may very advantageously be driven over the stubbles and amongst oak plantations, whence they will derive much condition towards the fattening for the winter market. Where there are chestnut trees they may be allowed to range with still more advantage, but, in these excursions, they should be invariably attended and watched lest they should stray away, as they are much in the habit of doing.

In the immediate vicinity of corn-fields, before harvest, they require no less attention; they scramble into the standing wheat, when they will destroy a great deal, and derive little good themselves from the mischief.

It is not uncommon, for the purposes of fattening for great weight, to castrate them in the same manner in which common fowls are converted into *capons*. At any rate the mixed meals, derived from wheat, barley, and oats, beaten up into a thick pulp with water, form the best artificial food which can be used to complete the fattening; such feeding, however, is only adapted to turkeys which are pounded for fattening. It will not be of so much service to birds which are allowed to range as the natural food which they will pick up of their own accord.

The proportion of the male to the females should be as six to one. The number of eggs upon which a turkey-hen may sit does not differ from that already mentioned of geese; and the period of incubation is of very regular duration owing to the perseverance of the turkey-hen as a sitter—it may be estimated at thirty-two days. The turkey-hen will frequently lay as many as from twenty to twenty-five eggs, so that in saving the eggs for incubation, we should in general await the issue of her laying, evinced by the omission to lay at the recurring period, before we place the adequate number of eggs under her.

114. Of Pigeons and Doves.—In treating of pigeons it is intended to confine the subject to those which are purely and strictly domesticated pigeons, and moreover to those which are numbered amongst the breeds known and raised in this country. Not but what as regards this latter reservation it is barely operative as such, inasmuch as there are few animals which are so universally adapted to varieties of locality, climate, &c., as the pigeon.

Again, in having exceeded the limits of veterinary science, properly so called, by entering into the consideration of poultry, we did so under the impression that much usefulness would be added to this work, by embracing the broadest compass of domestic animals, appropriated by artificial resources to the uses of mankind in civilized life. The main question is ever that of commercial importance, or of real productiveness for purposes of consumption and profit. In adding pigeons to the catalogue of domestic animals included in this work, we have transgressed this limit also; for whatever may be urged in their favor by those who hold them in a somewhat fantastical estimation, pigeons cannot be ranked amongst the profitable species of animals. This article is therefore rather directed to those who make a hobby or pleasure of rearing tame animals. For the pigeon is essentially a wasteful and destructive bird. *It is the curse of the agriculturist, whose more valuable grain is sacrificed for no adequate substitute in the shape of productiveness, and voraciously consumed without yielding a moderate contribution of profit in another direction.* Unless, moreover, pigeons are plentifully and constantly fed within the compass of the farm-yard or other homestead, they will invariably pursue the search for food abroad; and sometimes even the utmost precaution in respect of home-feeding will not obviate the mischief occasioned by the continual predatory excursions of birds which are quick of flight, and constantly on the wing. A casual glance at the natural history, construction, habits, &c., of the pigeon, will evince that it is essentially a migratory bird. Being, therefore, furnished with the mechanical appliances for long and untiring flight, it is impossible entirely to divest it of its natural instinct and characteristics; and it would be impossible to retain it in a state of complete bondage and constant confinement, without either wholly reversing its constitution, or on the other hand without depriving it of the peculiar characteristics and properties (if any) to which value may be attached. It is true that some varieties of the pigeon, such as the *ring* and *turtle doves*, which are, however, the least roving birds, are cooped up in cages, and survive a considerable length of time in this manner. But, in the first place, they are *naturally* deficient of the elevated qualities of wilder varieties (and therefore depend more easily upon artificial attention); and in the next place, they are never found *prolific* in this condition; whereas in the state of nature, the pigeon is amongst the most *prolific* animals of which we have any knowledge.

115. Various Breeds of Pigeons.—There are prodigious varieties of pigeons which, however, in many cases, differ but in unimportant points from one another, and which are evidently derived by hybridization from one common stock. The wild varieties are beyond our purpose. The most common inhabitant of the dove-cote is the blue pigeon. To these, from which a great number of subordinate varieties are derivable, we may add the pigeons of *fanciers*, such as the *tumblers*, *pouting horesman*, *fan-tails*, *runts*, and *dragoons*, &c.; and also the more serviceable breed, called the *carrier pigeon*, which has from time immemorial been devoted to the rapid conveyance of intelligence, but which is becoming superseded by the yet more rapid, certain, and convenient contrivances of modern science. The adaptation of electricity has in fact completely stripped the *carrier pigeon* of all importance.

116. Habits, Peculiarities, &c., of the Pigeon.—Unlike the poultry of which we have already spoken, pigeons associate in *pairs*. The cock and hen are thus matched, and are inalienable during the periods of breeding, as well as constantly accustomed to couple (the same male with the same female) at after periods; they are also frequently disconsolate if separated, even after the brood is reared. When, therefore, it is sought to match two particular birds, they should be caught and confined together until they have evidently paired, which will occur in a few days at the utmost. Pigeons, properly managed, will breed nine times in the course of the year, and sometimes oftener, whence they are very prolific, although they only raise two birds to each brood, and often only one. The *two* eggs laid by the hen pigeon are deposited with an interval of one day, so that the laying occupies three days, and the greatest length of time which elapses from the laying of the *first* egg to the hatching may be stated generally at *twenty* days; although, as we have remarked elsewhere, this period of incubation is often subject to a variation of from one to three days, and sometimes even of five days—under particular circumstances. The duties of setting, and afterwards of feeding the young, are alternately fulfilled by the male and female. With respect to setting, the hen generally fulfils her share of the duty unremittingly during the *night*, whereas the cock takes his place on the nest during the *greater part* of the *day*. The hen is provided with a peculiar power of generating food within her own crop adapted to the first days of the young birds. This is called the *soft meat*, and seems to be yielded by some particular process acting upon the grain in the crop. The *soft meat* continues to be the only food of the young pigeons (which are called *squabs* so long as they are confined to the nest) for the first week, after which it is modified by the admixture of grain, which gradually predominates, until it becomes the only food tendered to the young. After the young have left the nest, under the name of *squeakers*, which is their denomination until they have reared the first brood, they quickly attain maturity, and are commonly beginning to breed at the expiration of the first six months.

Some pigeons, under propitious circumstances, and if supplied with good and abundant grain, are known to breed every month. The approach of the period at which the hen should deposit her eggs is distinguishable by the persevering manner in which she is followed and hunted about by the cock, who will not let her rest (or roam) in peace, except upon the nest.

It is somewhat remarkable that, gifted, as the pigeon is known to be, with a powerful instinct, which may be termed a high order of *organ of locality*, whereby it can find its way to its home from extraordinary distances (as is the case with the *carrier*), and even return to the same spot, after transmigration, it will yet be not uncommonly lost in the immediate vicinity of the locality in which it is kept.

This is attributable to *its incurable habit of straying*, whether in search of food or merely of exercise. Hence the pigeons of one homestead will very often mingle with those of another, and will form new associations. The *full-grown* pigeon, if transplanted from one homestead to another, *can rarely be retained*, even by a long course of confinement, as its habit leads it to stray away, or, *especially, to return to its former home;* a reason why *squeakers* should always be preferably selected for removal, as the *young bird* will be readily attached to the place and the attendants where and by whom it is fed and tended.

Another habit which renders the pigeon to a great extent a pernicious vermin, consists in its plundering gardens, arable land, rick-yards, &c., of the grain, for which purpose it will wander to an astounding distance. During seedtime nothing will sufficiently protect the grain from being removed as soon as it is deposited by the flocks of pigeons which leave the homesteads (where they are kept) in search of their favorite food; and even if they be somewhat useful in clearing the land of weeds, they will always do far more mischief than good as regards corn of every description, pease, the small kind of *horse-beans*, called *pigeon-beans*, &c. As soon as the clavel becomes sufficiently large, that is as early as the month of July (in this country), they begin to plunder the ears, and this spoliation never ceases until the rick-yards are clear, and the last spring corn, such as barley, is fairly above ground. *Wheat* is the chief object of these predatory excursions, and the best wheat is generally selected.

117. The Breeding, Rearing, and Keeping of Pigeons.—Either a detached dove-cote may be erected in some part of the homestead, especially in the centre of a sheet of water or pond, if such there be; or a portion of the loft of a stable, or other similar outbuilding, may be parted off, and fitted up for the pigeons. In the latter case a species of *dormer* should be constructed to jut out through the roof, perforated in a number of places (consistent with the number of pigeons to which the loft is devoted), with small orifices of just sufficient size to admit of the ingress and egress of the birds. In front of such dormer, and on a level with the bottom of the orifices, there should be a projecting shelf, upon which the pigeons may settle. The aspect of the dormer should be such as to embrace any quarter between the southeastward and the westward, in a direction from the east by the south, towards the west. The color of the external frontage should be white; this is not so insignificant as it may appear. The interior of the loft should be surrounded with shelves, from sixteen to eighteen inches wide, about the same distance apart, and divided into small cells of the same width by the intersection of perpendicular partitions. The upper shelves alone should be open, and one tier should be guarded in front by a perpendicular slab, about four inches wide, along the basement, so as to prevent the eggs or nests from being shaken out, &c. In these compartments there should be constantly a supply of clean hay for the nests, and the loft (as well as the breeding compartments, on account of the *squabs*) should be amply supplied with large pans of clean water, rendered easily accessible on all sides by means of blocks raised to the level of the rim. With respect to the nests, it may be remarked that, in a wild state, even, pigeons are very careless builders, generally contenting themselves with a few sticks loosely placed across one another, so that, in a great number of cases, the eggs fall through; wherefore, when domesticated, it is very necessary to provide them with proper nests which they will otherwise never be at the pains of making. And with respect to water, it must be noticed that pigeons never thrive without access to it, wherein they bathe. They also require to drink very copiously and frequently; it is therefore necessary to add an adequate number of vessels, constantly filled with clean water, and so covered as to exclude dirt.

The loft or dove-cote should be kept scrupulously clean, the floor being strewed with coarse drift-sand, and that, as well as the shelves, being daily cleared of offal and excrements, and very constantly also scoured out, to prevent the accumulation of vermin, or the generation of foul odors. With reference to the protection of the loft from the attacks of rats, weasels, stoats, and other vermin, which will destroy the eggs and squabs, or even the old birds, the protection of a good cat is very advantageous. But the cat so appropriated should have been reared for this express purpose, and should have been accustomed to associate with the pigeons, lest it should become their destroyer instead of their protector. The greatest safeguard of all is the insular position of the dove-cote, or its being erected at the summit of an elevated and stout post, or its standing upon two or more of such posts, the capitals of which are protected by an impendent crest, jutting out some eight or ten inches beyond the circumference of the post, and bristling with a profusion of very sharp and irregular tenter-hooks. The dove-cote would then be accessible for the attendants only, by means of a movable ladder, which should never be left attached to it; and the shelves in the interior, as above described, should likewise be accessible by means of oblique ladders, such as those described in respect of the hen-roost.

When the squabs are deprived of their natural nurses by accidents of any kind, such as straying and the like, we must bring them up by hand, by assimilating the food as nearly as possible to that which nature, at the same age, would have provided for them. If, however, one of the old birds only is absent, the other, whether cock or hen, will rear them. The cock-pigeon, in fact, takes as much part in the hatching, and attention to the *squabs*, as the hen.

The utmost precaution should be taken to keep the food as well as the water, &c., free from dirt. Nothing will, in fact, be so likely to induce disease, and to destroy the pigeons, as inattention to *thorough cleanliness* in any respect.

118. Feeding of Pigeons.—In agricultural districts, where they may do serious damage, as above described, if allowed or tempted to stray in search of food by scanty supply, or the like,—if they are to be kept, great care should be taken to supply them with an adequate quantity of good grain. There should be an allowance for every pair of old birds *with young*, of at least one pint of seeds a day. The most economical food consists of *tares*, next to which may be numbered *gray pease*, and the small *horse-bean*. *Wheat* is their favorite food, but it is too valuable. They will also eat *rape-seed*, *hemp-seed*, *canary*, &c., if given occasionally; *buckwheat* may also be given from time to time. All the grain (grain of various kinds constitutes the *only* food of the pigeon) should be *old*, or *thoroughly well dried*. *New corn should never be allowed unless it has been kiln-dried at a moderate temperature.* And very large seeds, such as *large* horse-beans, should be strictly avoided.

119. A Brief Notice of the Diseases prevalent amongst Poultry, with some Cursory Remarks on their Treatment.—There is, unfortunately, but a very inadequate clue to the diseases of fowls; and pathological science has advanced but very little in the investigation. But it is a most remarkable provision of Nature, that the more the diseases and sufferings of subordinate grades of the creation are beyond the ken and assistance of mankind, the less are such creatures subject to disease. The casualties attending the feathered tribe generally, are certainly not varied in their character, nor are they nearly as serious as those of animals of a superior cast, and whose organism we have ample opportunities of investigating. When great mortality occurs amongst poultry (especially amongst young chickens), which is often the case, it is generally the indirect consequence of neglect or inattention on the part of the breeder.

In proof of this, we only require to take notice of the peculiarities attending the period during which there is an extraordinary prevalence of disease, or of the circumstances preceding and attending such prevalence of disease, and we shall find:

1st. That there has been some extraordinary atmospheric irregularity.

2d. That there has been considerable electric disturbance; these two circumstances resulting in variations of temperature, sudden transitions from heat to cold, and, *vice versâ*, excessive prevalence of moisture, an excessive radiation, deficient or excessive evaporation, &c., &c.

3d. That either in consequence of these circumstances, or accidentally, the food which has been apportioned to the poultry has been of inferior quality, and noxious properties.

4th. That there has not been sufficient attention paid to *cleanliness* and proper *ventilation*.

5th. That by having carefully considered all these relative or independent circumstances, we might have artificially obviated the pernicious effects which they exercised upon the animals; as, for instance, by investigation and change of food; by proper protection, &c.

6th. That if a comparison had been instituted between the fowls subjected to precautionary treatment and those which were left to take their chance, we should have detected an immense disparity.

Thus we may deduce, that the diseases of poultry are attributable to one of two causes: inclemency of climate and weather, or unwholesome food, with or without filth, &c. The great majority of the diseases (out of a comparatively small number) to which any classification has been assigned, are of a catarrhal nature: such, for instance, as *roup, chip, gapes;* whereas others, such as *vertigo, scouring,* and *costiveness* (in some instances), *pip* and *vermin,* are attributable to mistaken, excessive, or deficient feeding; and affections of the *claws, skin,* &c., are attributable to want of cleanliness, air, exercise, &c. With respect, therefore, to the treatment, as a general rule we should indicate the modification of the cause; as, for instance, against the former class of diseases, warmth, protection from the weather, with healthy ventilation, dry housing, &c. And against the second class of complaints, a change of food, the withholding of miscellaneous food, the administration of well-selected food at regular intervals, in small quantities, and carefully prepared; as also the thorough cleanliness of the roost or dove-cote, the removal of all noxious vapors and odors, and thorough ventilation. The mechanical means, that is, the removal of the characteristic white scale from the tongue, in pip, is worse than useless—for to render it of any avail the disease must needs be purely local, which it is not.

It is a fact worthy of notice, that most of the known remedies consecrated by immemorial usage, in the treatment of the diseases of poultry, generally, are homœopathic; but they are very erroneously administered according to existing notions.

In the treatment of BONE-WEN, an affection which has been thought incurable, we have succeeded with *Hepar s.* and *Silicea,* by dissolving three globules every day in the water apportioned to the fowls affected. We have also used *Mercurius* for PIP and for PROTRUSION OF THE OVARY; *Bryonia, Allium,** and *Arsenicum,* in ROUP; *Opium* and *Sulphur,* in GAPES and CONSTIPATION; *Ferrum a.** (a popular remedy), *Secale* and *Sulphur,* against SCOURING, with great success. *Agaricus m.,* and *Calcarea,* during MOULTING, also with considerable success. *Colchicum* and *Sulphur* for CHIP; *China* and *Staphisagria** for the spontaneous generation of VERMIN; as also *Tobacco** (the last externally), followed by *Pulsatilla* (internally), in the same case; *Mercurius, China,* and *Silicea,* against CORE; *Cannabis* against general and unaccountable EMACIATION.

These seventeen, we regret to say, complete the whole repertory of medicines which we have had an opportunity of testing upon poultry, although these have, indeed, been used in a variety of less important affections, which it is barely worth while to recapitulate.

The period of moulting is that in which poultry are most susceptible, and during which, therefore, they will require the most attention, and will be most likely to require medicinal interference. As soon as any serious ailment becomes apparent in one or more chickens, the better plan, both on their own account and on account of the rest, will be to separate them from the usual haunts of the poultry, and to assign to them compartments reserved for accidental requirements in the roost, or to remove them to the care and attention of the household. They will often do better in some apartment, such as a kitchen, where there is constantly a fire, than anywhere else.

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* These four remedies are amongst those whose popular use has prevailed from time immemorial, and are amongst the *only medicinal agents hitherto successfully employed in the treatment of poultry;* whereas these even have been perniciously used, and have been deprived by such means of much of their real value. This is a most interesting fact, and one which deserves to be attentively considered, if it be only as a starting-point which may lead to more important discoveries, and more especially as to the corroborative testimony which it furnishes in favor of Homœopathy.

A Short Description of the Diseases referred to.—The *bone-wen* is an enlargement or excrescence, forming about the bones of the joints, similarly to that which we shall have to refer to in respect of the horse, under the head of "Splint."

Pip is a complaint characterized by the formation of a white scale at the extremity of the tongue. The fowl begins by moping, and keeping apart, refuses to eat, and is dilatory and irregular in its motions. Costiveness is most frequently an attendant symptom, and we sometimes find considerable heat, especially about the belly, close to the thighs.

Roup is a term which includes a variety of catarrhal affections, arising out of exposure to changes of temperature, wet, &c., &c. One of the characterizing features of the disease, in an advanced stage, consists of discharge from the nostrils; the eyes are also occasionally involved, being swollen and inflamed.

Chip or *chipping*, so called from the peculiar cry emitted by the bird, is another disease, which partakes of the general character of roup. It is confined to young chickens, and is very fatal if not taken in time; but *Colchicum* has been administered with admirable results in the earlier stages. It arises from wet weather, the light down of young birds becoming easily saturated and long in drying. The feathers droop, and lose their gloss; the chicken is extremely tender of being touched; there is considerable fever, and external heat is remarkably developed, although the chicken sits trembling violently and continually. Chickens affected with *chip* seek refuge in solitary corners, where they are only detected by the regular and plaintive cry,—and thus they gradually sink and die.

Scouring and costiveness need no particular description.

Core consists of the formation of a species of deposit, or excrescence, either in the gullet or alvine passage. The core varies in color, sometimes being brownish-yellow, sometimes darker, and sometimes of the color of ochre intermingled with red.

Gapes, or *the yawning disease*, so called from the prevalent characteristic symptom, is another modification of roup, and its subordinate catarrhal affections.

CHAPTER III.

AFFECTIONS OF THE HEAD, EYES, NOSE, AND MOUTH.

SECTION I.—AFFECTIONS OF THE HEAD.

INSANITY OF ANIMALS—GIDDINESS—INFLAMMATION OF THE BRAIN—ENCEPHALITIS—PHRENITIS—MAD STAGGERS—BLIND STAGGERS—APOPLEXY—MEGRIM—SLEEPY STAGGERS—STOMACH STAGGERS—SUNSTROKE—CONCUSSION OF THE BRAIN—VERTIGO—DROPSY OF THE BRAIN.

120. THESE various names are given to the different or similar brain affections of horses and other animals. The following descriptions, without attempting to distinguish all the different forms of cerebral disease, will be found to cover nearly, if not quite all, their principal conditions. And in the treatment of these various forms of head affections we have not undertaken to repeat under each form the medicines especially suited to this disease, with their particular indicative symptoms; but have thought it better to set down in the order of their importance the principal remedies with their most characteristic symptoms for all these disorders of the head. Thus, whatever may be the nature of the brain affection of the patient—whether a horse or whatever other animal—the disease will be found described with sufficient distinctness. And if the corresponding medicine is not to be discovered among those here set down at length, the veterinarian is referred to the Materia Medica for further study of these, or for a careful examination of those composing the additional list at the close of the section.

And it may be remarked here that a similar course is everywhere pursued throughout this book. A list of less frequently needed medicines being affixed to each "*treatment*," or remedies, whose indications are somewhat fully stated. But these indications can be regarded as little more than therapeutic hints, and in every case the Materia Medica should be consulted, in order to insure a complete correspondence of the remedy with the condition of the patient.

121. Insanity.—Many animals, including all the domestic, possess a nervous system—brain and spinal cord—similar to that of man. This nervous system is subject to the same adverse influences with that of man; and it is liable, although not to so great an extent, to similar disorders. In addition to their natural instinct, animals have also mental faculties, a mind of the same nature with that of man; they have, as is well known, perception, memory, cunning, contrivance, reason, and judgment. And these faculties are equally with those of man liable to be deranged by nervous diseases or other injurious influences. More than all the rest, animals, both wild and domestic, have also a moral nature and moral faculties, feelings, affections, and propensities, such as are termed *good* and *evil* in man. They are courageous or cowardly, bold or timid, peaceable or quarrelsome, dangerous or harmless, grateful or revengeful, hateful or affectionate. They are capable of joy and of sorrow, of pleasure and of pain, of excitement and of depression, of being delighted by praise or humbled by reproaches, conscious, to a certain extent, of right and wrong doing, and keenly alive, in anticipation, to the rewards and punishments which they know follow particular actions. In many, wild animals especially, these moral traits predominate over all others; as in their affection for their offspring, and their courage in defending them. These most powerful affectional feelings are so developed in domestic animals at certain times as to entirely change their whole character; thus it is often dangerous for an acquaintance of the family even to go near the kennel of a bitch nursing her young. And so strong are the affections of some dogs that they refuse all food when their masters die, and perish by their graves.

These moral, emotional or affectional feelings of animals, like their intellectual faculties, equally with those of man, are capable of being disturbed, disordered, and totally changed by untoward influences. "Certain of the lower animals, especially those which are domesticated, are subject to many of the same diseases of the *brain or nervous system* that are so common to man; and hence arises at least the probability that they are equally liable to those functional cerebral disorders that are productive of or constitute insanity in man." "Many of the lower animals exhibit the same sudden and apparently causeless and marked *changes in disposition or habit* that constitute the *prodromata* (forerunners) of insanity in man. These phenomena include the development of perverted or depraved appetites, of alterations in the affections and temper, and of remarkable change of the natural habits of the individual. It has been frequently noted that the horse, dog, ox, and other domestic animals become 'bad tempered' or 'curious' in their ways,—that they exhibit 'viciousness,' or look 'wicked' prior to the development of various diseases of the brain or nervous system."

Mr. Williams, principal of the Edinburgh Veterinary College, has seen many cases of *acute madness* from inflammation of the brain and its membranes, arising idiopathically, traumatically, or from sympathy, as in engorgement of the stomach. He has also seen *intermittent madness* from tumors on the brain, thickening of the membranes, abscesses, and one from softening of the cervical bones. In connection with the formation of abscesses, a horse under his care became, and for many years remained, an *idiot*. He was called a "cranky" horse, but was harmless and did his work well enough. Most people will have read of *mad elephants*, some even of those most tame and docile, at certain seasons will have paroxysms of furious and most determined madness. Prof. McBride, of the Royal Agricultural College, reports that he has seen cases of *frenzy* from blood disorder, or diseases of the digestive organs, and states that there are certain forms of excitement, commonly called *vice*, which he firmly believes to be *insanity*, and which is often hereditary. Where this disorder acts on the *moral* or *emotional nature*, a corresponding moral disturbance is produced; and animals formerly docile become at once vicious and intractable, and finally dangerous to approach.

Madness, as applied to animals, is usually supposed to refer to *rabies;* and few farriers, or veterinarians, would stop to note the difference. Rabies is a specific contagious disorder, spontaneously produced in the dog, wolf, and other animals; it is transmissible to animals of different species, and to man, in whom it constitutes *hydrophobia*. Rabies proper, like hydrophobia in man, is of comparatively rare occurrence; nor does it belong to the category of insanity, although there is little reason to doubt that insanity occurs as a symptom in all such cases when they are fully developed.

Dr. Lindsay says* that it is "an easily provable fact that much, at least, of the so-called madness of lower animals is strictly equivalent to what is called insanity in man." He considers, as we think, with great correctness, that the majority of cases of so-called *madness* in animals, which are usually attributed to *rabies*, are really of the nature of *insanity*, strictly comparable with that of man. And that the majority of cases of animal madness which are not assignable to rabies are of the character of mania as it appears in man. The erotomania (amorous madness) of some animals in the rutting season, and the puerperal murderous mania which leads sows to destroy their new-born pigs, are instances of the same kind—*i. e.*, of animal insanity, a mania which is not rabies—familiar to all.

122. Treatment.—Homœopathy alone offers remedies capable of being used with success in the various forms of insanity and madness, those especially which are not dependent on rabies.

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* "Journal of Mental Science," July, 1869.

Belladonna.—This is one of the most important remedies in mania of the acute form; and it may prove useful in every case when the insanity results from an affection of the brain, and in which the characteristic symptoms of this medicine—as laid down in the Materia Medica, and in the article "Inflammation of the Brain"—may appear. From four to ten drops of this may be given three or four times a day, according to the size and age of the animal and the severity of the symptoms.

Stramonium very much resembles Belladonna, and may be indicated and do much good where the latter seems to be called for but does not avail. Consult the Materia Medica for particular indications of these and the following named medicines: *Arsenicum, Sulphur.*

Hyoscyamus.—This may be required in erotomania or madness connected with the sexual instinct; great excitability; pupils dilated, sleeplessness.

Study also the characteristic indications of the various remedies advised under different forms of cerebral disorder.

Dose.—Ten drops of the selected remedy may be dissolved in a pint of water, as directed on p. 34, and a wineglassful given once in one, two, four or six hours, according to the urgency of the symptoms.

123. Giddiness.—Horses (in harness especially) are subject to peculiar attacks of giddiness and loss of consciousness, with or without falling, and more or less intense, which are known by the name of megrims, and which are occasioned by the too great dilatation of the vessels of the brain, and even of those which traverse the substance of that organ. See "Megrims" or "Vertigo," in subsequent sections.

Causes.—Generally the excessive tightness of some parts of the harness, especially of the bearing-rein.

Symptoms.—Suddenly stopping (without any previous appearance of derangement), shaking the head, and slightly reeling (evidently giddy and unconscious for the time); and sometimes falling, and lying motionless and insensible, after which the animal gradually returns to its senses, and will proceed as before, with the only difference of being more sluggish and languid; sometimes the issue is instantaneous death, and the horse is always liable to a recurrence of the attack.

Treatment.—Consult the article on "Specific Effects," and select, according to symptoms and general habit, from: Aconitum, Arnica, Belladonna, China, Conium, Lachesis, Nux Vomica, Opium, Pulsatilla, Rhus, Silicea, and Sulphur.

Doses.—Administer the medicine morning and evening, for a week, after a fit has occurred, as directed under "Insanity."

124. Apoplexy of horses differs from staggers in this, that neither is there inflammation of the brain nor distension of the stomach.

Symptoms.—The premonitory symptoms consist in the hanging down or resting of the head for support; evident dulness of sight and hearing, and a toppling, reeling motion, even when stationary; if erect, after a varied duration of these manifestations—(in a case within our recollection, they continued twenty-three hours)—a sudden fall takes place, muscular twitchings are observable, the vessels of the neck are distended, the muzzle is characterized by coldness, the eyes being prominent, wide open, and immovable, and the pupils much dilated, with grinding of the teeth, and incapability of deglutition; sometimes, expulsion of all fluids through the nostrils, and spontaneous evacuations; if convulsions ensue the case is usually hopeless. Oxen, cows, &c., are subject to apoplexy exhibiting the following symptoms (with little or no premonition)—sudden falling, with loud, thick, heavy, noisy, or gurgling respiration, and fearful struggles. Sheep exhibit premonitory symptoms, such as slow and languid movements, apparent stupor, deficient or lazy rumination, and slight heaving of the flanks; they then, of a sudden, become perfectly motionless as they stand; with insensibility of hearing; immovable and insensible eyes; dilated pupils; or even purple hue of the conjunctiva and interior of the nostrils (which are dilated); tottering of the limbs on attempting to move; thick, gurgling, or snoring respiration, and a full, hard (distensive), pulse; sometimes the pulse is impeded, confluent, slow, and full; lastly, the animal oscillates, and finally falls; the struggle which ensues is but of short duration. The pig betrays similar symptoms, but the eye has a more frenzied and bright-red appearance, and the surface of the body generally appears to be numbed and insensible.

Treatment.—Consult the article on "Specific Effects," and select according to symptoms and general habit, from: Aconitum, Antimonium crud., Arnica, Baryta carb., Belladonna, Cocculus, Conium, Digitalis, Hyoscyamus, Ipecacuanha (for sheep especially), Lachesis, Mercurius, Nux vomica, Opium, Pulsatilla, and Tartarus emeticus.

Doses.—On the first appearance of premonitory symptoms, administer repeated doses of the appropriate remedy, at intervals of from ten to sixty minutes, until the symptoms subside; or, immediately upon recovery from a paroxysm, administer a dose, repeating it after two hours, again after three more hours, and again after six hours.

125. **Sunstroke, Coup de Soleil,** may be called that form of apoplexy, in horses particularly, which is brought on by over-exertion and exposure to the intense heat of the sun.

126. **Staggers** is a disease to which horses are subject, and of which there are two varieties, viz., stomach or sleepy staggers, characterized by distension of the stomach, and purely occasioned by irregular and excessive feeding (eating too quick): and mad staggers with inflammation of the brain, and corresponding with that disease in other animals.

Symptoms of stomach staggers (with distension of the stomach).—The animal standing listlessly, drooping, drowsy, and oscillating, or staring vacantly if disturbed; continually dozing, or dozing with food in the mouth, as, for instance, a mouthful of hay; and lastly, falling; delirium sometimes ensues, the animal repeatedly falling, and getting up again, and violently striking at itself, or being seized with severe convulsions; sometimes, also, there is great difficulty in backing; if in action, the feet are lifted very high; the head is turned right and left, without changing position, or the animal falling upon its haunches, and wheeling round, with the fore-legs stiff and straightened.

127. **In Mad Staggers** the early symptoms are very analogous to those of the stomach or sleepy staggers; but as the real nature of this disease—inflammation of the brain—develops its characteristic features, violent heaving of the flanks ensues; the eyes become wild, red, and staring; the nostrils are strongly dilated; and, in the place of the heavy, drowsy, sleepiness of the eyes, the eyes become vivid, strongly and permanently opened, and furious delirium, with frantic movements, ensues; the animal rushes furiously from place to place, but with no malicious destructiveness, as in rabies, and evidently quite unconscious; whereas, in the rabid disease, consciousness is never lost; lastly the stupor returns in an aggravated degree, or the animal is perfectly exhausted and motionless. Colic is often characterized by movements and fury almost akin to that of staggers (frenzy, or brain fever), but consciousness is never lost in colic, and the rolling is the more prevalent and characteristic of the movements.

128. **Inflammation of the Brain, Brain Fever, or Frenzy.**—This disease, which prevails amongst oxen, &c., sheep, dogs, and other animals, chiefly at the height of summer, and when the heat is excessive, and which may at such times be provoked by over-driving or excessive

exposure to the direct rays of the sun, or by insufficiency of water, or excessive and over-stimulating food, is analogous to the mad staggers of the horse. Pigs are generally subject to this complaint, as the consecutive result of apoplexy.

Symptoms.—Cattle, in addition to, or with some modification of the symptoms of mad staggers, also exhibit the following peculiarities in brain fever: During the frenzied period there is a peculiar aversion to, or excitation caused by, red (a color of which cattle have a natural abhorrence); the movements are, perhaps, more heedless and headlong than those of the horse; the tail is arched, the furious galloping incessant, and the bellowing frightful; the skin adheres to the ribs (as in hidebound), and the whole course of the spine and adjacent parts are peculiarly tender of being touched; lastly, the animal falls head foremost, and either relapses into stupor or remains motionless from exhaustion; the premonitory symptoms consist of vivid redness and prominence of the eyes; invincible repugnance to motion, heavy dulness and drowsiness, and thick, oppressed, and heavy respiration. Amongst sheep the symptoms partake of the features already described. It is more frequently developed amongst lambs than amongst full-grown sheep. As in the case of the pig, it is liable to follow as the consecutive result of apoplexy.

Consult the article on Materia Medica, to select from: Aconitum, Arsenicum, Belladonna, Bryonia, Calcarea, Causticum, Cocculus, Digitalis, Dulcamara, Ignatia, Pulsatilla, Rhus, Veratrum (especially if the spine be severely affected); or, generally: Aconitum, Belladonna, Bryonia, Camphor Tincture (if caused by sunstroke), Cantharides, Cina, Cocculus, Cuprum a., Digitalis, Helleborus nig., Hyoscyamus, Lachesis, Mercurius, Opium, and Sulphur.

Doses.—Of Camphor Tincture, from four to ten drops, for oxen, &c., and from two to six drops, for sheep and pigs, every half hour, until the symptoms subside. The administration of the other remedies should be such as directed in the two following pages.

129. Treatment.—In giddiness, apoplexy, sunstroke, and mad and stomach staggers, or inflammation of the brain, ten drops of the diluted remedy should be mixed in a little water for horses, a smaller number of drops for animals less in size, and a wineglassful given, as already directed, as soon as the premonitory symptoms set in, and the dose should be repeated at intervals of from ten to sixty minutes, until the symptoms subside. After recovering from a fit, the medicine should be given for a week at least, night and morning.

or labors under constipation, and in horses suffering from weakness or old age.

Stomach staggers—palsy of the stomach—is a disease sometimes temporary, caused by driving too soon after eating a hearty meal, especially of corn; and it may show itself in the mildest form by frequent and continual stumbling and hocking (stumbling with hind-feet) when driving under such circumstances. *Nux vom.* will greatly help in this case.

The proper treatment of stomach staggers (caused in great measure by pressure of the contents of the stomach, flatus, and undigested food, upon the large nerves, and so reflected to the brain) will be greatly facilitated by freely opening the bowels as soon as possible. This may be done by giving one pint of *Linseed oil*, or half a pint of *Castor oil;* and, in urgent cases, the action of the purgative may be hastened by administering an injection consisting of half a gallon of warm milk and water, or warm soapsuds.

Stramonium.—Ten drops mixed as above directed, and a similar dose once in three hours, may be given in what are popularly called "blind staggers," where the horse suddenly stops, shakes his head, staggers, falls down, presently he gets up and proceeds on his way, or he may stagger without falling. Trembling and convulsion of the whole body. Rolling of the eyes. Nostrils fully dilated.

Lycopodium may be indicated in such a case as that described under Stramonium, and given in a similar dose, when the *fan-like* opening and closing of the nostrils is distinctly perceptible: it may then be given in conjunction with this remedy; a dose once in four hours. And in connection with *Nux vomica* when there is much and rapid formation of flatulence.

If no one of the above-mentioned remedies seems to suit the case in hand, study in the Materia Medica portion of this work each of the following medicines: *Arsenicum, Bryonia, Cocculus, Conium, Hyoscyamus, Lachesis.*

To remove the tendency to apoplexy and many other brain diseases, *Sulphur* may be given twice a week with great advantage.

In addition to the medicines already mentioned under various affections of the head, and which should be more fully studied in the Materia Medica chapter, the following may also be consulted: Anti. c., China, Conium, Cocculus, Lachesis, Rhus, Digitalis, Hyoscyamus, Ipecacuanha, for sheep especially, Mercurius, and Tartar emetic.

130. Concussion of the Brain.—This disorder, the result of some mechanical influence, needs no particular description. Every violent blow or fall upon the head is liable to result in concussion of the brain.

Treatment.—This is very simple. *Arnica* is the principal and, when the case is at all curative, the sufficient remedy. It should be given internally, in doses of three to five drops of the dilution once in three hours, or three times a day, according to the severity of the original injury. Externally the *Arnica lotion* should be freely applied thrice daily.

131. Megrims, or Vertigo.—Vertigo, more commonly called Megrims, is an affection of the brain, but the nature of the disease is not well understood. By some veterinarians it has been defined to be a momentary and passing congestion of the brain.

The attack is very sudden and peculiar. There are seldom any premonitory symptoms. The animal suddenly shakes and throws up his head, or shakes it violently, or reels and then stands for a minute or two dull and listless, or runs round, and falls to the ground, remaining for a few moments partially insensible or in a state of violent convulsion. The attack rapidly passes away, the horse rises in a minute or two, shakes himself and proceeds, as if nothing had happened, though perhaps he may appear somewhat debilitated. During the fit he may stale or dung insensibly. The attacks are usually periodical, and occur chiefly during hot weather and at severe harness work.

There is seldom any outward sign, which indicates liability to this disease. On the contrary, the horse looks well, has a good appetite, and shows no special nervousness or dulness. The best veterinary surgeon cannot detect a possible liability to this disease, and post-mortem examination also sometimes fails to reveal the cause.

Certain sorts of horses are, however, more liable to it than others, such, for instance, as those known as star-gazers, with an erect and stiff neck, also those with an awkward protrusion of the nose, with the head so set on that it is difficult to be reined in. It has also been observed to be more common in animals that carry their heads on one side than in others.

Though we cannot assign the positive causes of this disease, yet it is pretty certain that it is connected with retardation of the flow of blood from the brain. Harness-horses are far more subject to it than saddle-horses. Many horses, which suffer from it in the collar, are free from it at other times. The collar, probably by retarding the blood returning from the brain, appears specially to predispose to it.

Various other circumstances also appear indirectly to develop the disease, and to increase or diminish the chance of its recurrence. Hot weather, bright sun, and high temper certainly predispose to it. Tight reining up and bearing reins, probably, by retarding the return of the blood from the head, develop it. Severe work and bad feeding on the one hand, and high feeding and little work on the other hand, are both apt to bring it on. Fair condition and moderate work diminish the tendency to attacks. Horses which have lost a vein from the effect of clumsy bleeding are said to be predisposed to it.

It has been noticed as a practical fact, that horses are more often attacked during the intervals of sunshine, which sometimes occur on hot cloudy days in summer, than at any other time.

132. Treatment, Preventive.—*Aconite*, *Belladonna*, and *Hyoscyamus* have been recommended to be given to young horses especially, to prevent the recurrence of the attack. The predisposition to this affection may be removed in some cases by giving *Sulphur* once a day for one week, then omit a week, and so on; give six drops for a dose, in the morning. The same dose may be employed for each of the above-mentioned remedies.

This affection is frequently observed in oxen employed in draught. It is often the result of great heat; the animal staggers on a sudden, and falls to the ground, where he remains for a time stretched and motionless.

Consult also the medicines advised under the head of "Frenzy," Nos. 128, 129.

Aconite affords instantaneous relief when the fit comes from fatigue during hot weather. Should the attack not readily yield, it assumes rather the form of *sunstroke;* consult, therefore, the remedies mentioned for that affection.

Arnica is indicated when the animal inclines to the right, or seems drunk, or holds the head very low (in the latter case if Arnica do not relieve, give Nux vomica).

China and **Cocculus** are indicated when the smallest exertion distresses the animal very much.

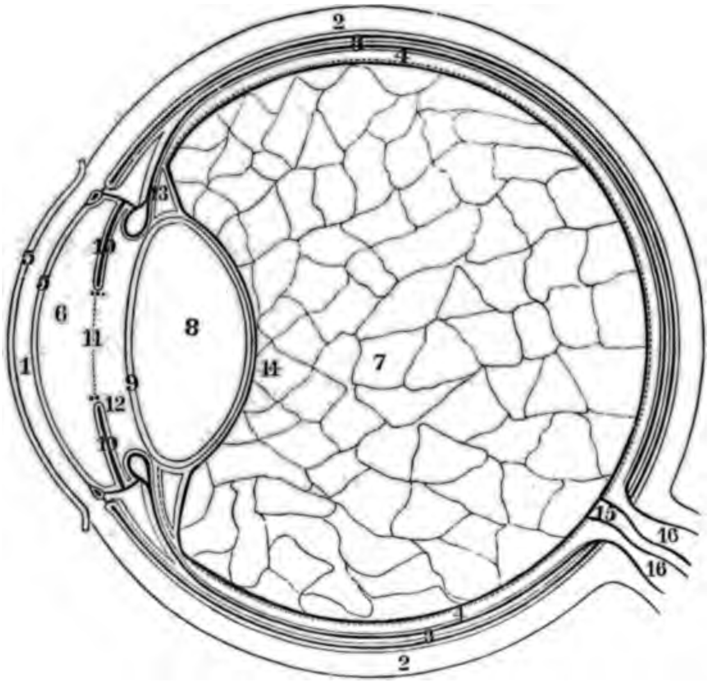
Stramonium.—This remedy is remarkably indicated in vertigo; see indications for its use, in the preceding section. Twenty drops may be given in a little water after the fit is over.

Dose.—Of either of those remedies which is to be given, let ten drops be mixed in a pint of water, and give a wineglassful every hour, or two or three hours, according to the severity of the symptoms.

Nux vomica will be required when the fæces are hard and the urine

PLATE XI.

The Eye.



1. Cornea.
2, 2. Sclerotic coat.
3, 3. Choroid coat.
4, 4. Retina.
5, 5. Cornea.
6. Aqueous humor.
7. Vitreous humor.
8. Crystalline lens.
9. Capsule of lens.
10, 10. Iris.
11. Pupillary opening.
12. Corpora nigra.
13. Ciliary ligament.
14. Hyaloid membrane.
15. Optic nerve.
16, 16. Arteries and veins.

stand abstractedly over it, often till giddiness supervenes, and it falls headlong into the stream or ditch; whilst browsing, the animal appears from time to time to be suddenly startled, and after staring stupidly about it for a moment, it suddenly starts away at the top of its speed; the substance of the eye becomes gradually discolored, until it is perfectly blue; and the head is fixedly turned to one and constantly to the same side; or sometimes on one side, sometimes on the other, or lowered forwards (with repeated headlong falling), and occasionally, raised and reverted upwards towards the back, when the animal will oscillate from side to side in moving; these symptoms increase until the animal begins to spin round upon one spot until it falls, whilst, upon getting up again, the same motion is renewed.

135. Treatment.—Consult the Materia Medica, and select thereupon from: Belladonna, Cantharides, China, Cina, Graphites, Mercurius, Rhus, Ruta. Give five-drop doses. Upon the first detection of the premonitory symptoms, the administration should be repeated every twelve hours, until relief ensues.

136. Cows are subject to a similar affection, arising, also, out of the presence of this peculiar insect, inclosed in tumors generated by it, and forming upon the surface, between the membranes, or within the substance of the brain. The *symptoms* are very similar, differing only in the effects which are peculiar to the species; increased heat, more or less intense, in the ears and roots of the horn; staring coat; dryness of the muzzle; accelerated and small (sometimes) or full and bounding pulse; little appetite, without rumination, and, by degrees, the commencement of the characteristic rotatory motion. The remedies above mentioned may be consulted, although the affection is obviously not very amenable to medication, in any domestic animal.

SECTION II.

137. Diseases and Casualties Affecting or Connected with the Eyes and Eyelids.—Affections of the eyes in animals are generally attendant upon other constitutional disturbance, and in these cases become symptoms which should qualify the treatment of the primary disease. Inflammatory affections of the eyes, however, sometimes occur independently of other derangements, as originating from lesion of any kind, such as a blow, the insinuation of gritty particles, or even exposure to keen winds, to catarrhal affections, or excessive exertion. There is also a prevalent disease which is of epidemic and intermittent character, and which is known as specific ophthalmia. The ox, cow, &c., the horse, the sheep, and even the dog, are especially liable to this periodical affection of the eyes; but in respect of the last, it is characterized by totally distinct symptoms and effects. The sheep is subject to some affections of the eye, which are peculiar to it, or which accompany particular diseases. All animals are subject to severe affections of the eyes, resulting from mange or scab, and must be treated by the selection of the proper remedy from amongst those recited under the head of "Mange and Scab." Dropsical swelling of the eye in sheep, attendant upon or resulting from rot, requires to be treated by an appropriate selection from the remedies indicated for the treatment of that disease (see the article on "Rot"). It should not be omitted, moreover, that the eyes of sheep evince premonitory symptoms, which are amongst the first and most distinct indications of incipient rot, wherefore, the comparison between the eye in health, and any deviation therefrom, is very important. In health, the white of the eye is of a semitransparent slightly bluish tinge (like pearl), interspersed towards the corners with very small, bright-red vessels (without suffusion), and a dirty, brownish, or faint yellowish hue: on the approach of rot, the vessels becoming enlarged, and of a turgid, brownish-red, or murky color; the small, elevated gland (the caruncle) at the inner corner of the eye should be of a bright flesh color, or healthy bright blood color, but becomes paler, and of a thick, dull hue, as rot is imminent. Falling off of the eyelashes, and callous excrescences on the margins of the eyelids; as, also, soreness, swelling, and even the turning up of the margins, exhibiting the edge of the interior surface, are not uncommon attendants upon scab, and should then be treated appropriately to that disease. Oxen, &c., are especially subject to the development of ulceration and fungous excrescences about the caruncle, the haw, and adjacent cartilages, either owing to affections of the eye itself, which react upon this apparatus very readily, or owing to the presence of irritating substances. If observed at first, and occasioned by lesion, as last named, Arnica lotion (one part of tincture to fifteen of water), applied by bathing gently, will suffice to obviate further mischief. The eyelids of oxen, cows, &c., are also peculiarly susceptible of irritation, whether sympathetically with the eye or independently of it. Thickening of the lid is the consequence. Dropsical swellings of the lids, which are prevalent in low, swampy, and unhealthy pastures, are dependent upon constitutional debility, and should be so treated. Dogs are subject to enlargements of the eye itself, occasioned by the presence of a morbid fluid (Digitalis, Helleborus, Kali carb., Ledum, and Phosphorus, should be referred to for this symptom). They are also liable to opacity, terminating in cataract, either owing to acute inflammation, local injuries, or even the infirmity of age, which last may be considered as hopeless. Blindness in the dog (from paralysis of the optic nerve) is distinguishable by the extreme glassy and unchangeable brightness and transparency of the eye. The horse is subject to callous excrescences on the eyelids, and even to an inflammation and ulceration of the cartilage, similar to that which has been described as affecting oxen, &c., or there is scaliness of the margins of the eyelids.

138. Simple or Irritative Inflammation of the Eyes.—*General Symptoms:* Redness, swelling, and heat of the eyelids; a degree of filmy cloudiness of the cornea; the development of red irregular lines over the white of the eye; watering of the eyes; the eyes being half closed, drooping, blinking, and evidently tender of light and exposure to a current of air.

External treatment will often suffice, when lesion, or rapid motion against wind and drifting dust has been the cause, when Tincture of Arnica will be beneficially used.

Application.—To one part of the Tincture of Arnica add from ten to fifteen parts of water, and bathe the eyes every four hours with the lotion, until the symptoms subside.

See also indications of medicines under "Specific Ophthalmia."

139. Ophthalmia, Specific, Periodical, or Catarrhal.*—*General Symptoms:* The earliest indications are the same as in simple inflammation; this proceeds, however, to increased dimness of the cornea, to the gradual development of opacity in the lens, and in its immediate integument. As the inflammation proceeds, the eyes become excessively tender of light, the pupils severely contracted, and the iris assumes a deadened hue; the inflammation will continue a great length of time, and then suddenly subside, little or no appearance remaining of the attack, unless it be that, when exposed directly to the light, the eye evidently suffers, blinks, and is convulsively closed,—or that the lids

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* A disease which strikingly evinces the defects of allopathic measures, and serves equally to illustrate the admirable superiority of the direct specific and unerring adaptation of the homœopathic medicament; wherefore, when treated homœopathically at the onset, the periodicity and continual return of the attack is wholly unknown, or occurs very rarely.

Conium, dose as directed for Aconite and repeated three times a day, will be found useful when Aconite and Arnica have removed the immediate effects of contusions upon the eyes or parts near by, and there appears an exudation between the laminæ of the cornea. Conium will be required in the first instance for consequences of former mechanical injuries to those parts, which are presented for treatment after some time has passed. Conium is as efficacious, so far as any remedy can be, for old injuries as Arnica is for those that are recent.

Euphrasia.—Catarrhal inflammation of the eyes, copious flow of tears, great intolerance of light.

Pulsatilla.—Similar condition to that under Euphrasia, where this latter remedy proves insufficient, or where there is much nasal discharge.

Arsenicum.—This remedy may be required in the more severe forms of catarrhal ophthalmia, also in *periodic* ophthalmia, and when the inflammation appears first in one eye, and after running its course then attacks the other. Especially useful for dogs.

Nux vomica will often be found useful in catarrhal ophthalmia, as an intercurrent remedy, particularly where indigestion or constipation complicates the case.

Sulphur may prove essential to the cure of eye diseases which fail to be removed by other and more particularly indicated remedies. It is especially advised in intractable ophthalmias of mangy dogs.

Dose, for the above remedies, prepared and given as directed for Aconite.

141. Purulent Ophthalmia, Blennophthalmia, Chronic Catarrh of the Eyelids, Blear Eyes.—Acute purulent ophthalmia, or catarrh of the eyes, probably never occurs except in conjunction with influenza or nasal catarrh; and the suitable treatment will be found under that disorder. *Chronic catarrh of the eyelids*, chronic conjunctivitis, "blear-eyed," requires both external and internal treatment.

Treatment.—**Hepar s. c.** may be given if there is rawness of the edges of the lids and profuse flow of mucus.

Mercurius corros., if there is much secretion of mucus, which gums up the lids and makes them stick together.

These remedies may be given in wineglassful, tablespoonful, or teaspoonful doses of a mixture prepared (see p. 34) by dissolving ten drops of the selected remedy in one pint of water; give a dose night and morning. And their action may be assisted, after they have been given for some time, by using a gentle astringent lotion composed of Alum, six grains to the ounce of soft water; or of *Sulphate of Zinc*, one to four rains to the ounce of rain or distilled water. The affected eyes and ds should be carefully cleansed with pure soft water three times a ay, and then either one or the other of these two lotions may be applied reely with a soft and clean sponge.

For other indications of these remedies consult Materia Medica; lso with respect to other remedies mentioned in this section under various affections of the eyes; and also with respect to list of medicines at the close of this section.

142. **Specks on the Lens; Opacities of the Cornea.**—These have been called False Cataract. A whitish gray speck (or specks) is seen on the lens or its capsule—sometimes the result of inflammation; and will disappear, occasionally, without treatment.

Cannabis may aid Nature to remove them; it should be given in six-drop doses, night and morning. See the treatment recommended for Cataract.

143. **Cataract.**—A term used to signify opacity of the crystalline lens, or its capsule—an opaque body gradually filling up the pupil of the eye, the color of which may be white, gray, or yellow. At first the vision is only partially impaired, as by amaurosis; but the disease gradually advances until the sight is finally lost. The condition can easily be recognized if the horse is brought to the stable door in a moderate light, and the pupil carefully inspected.

Ammo. mur., Cannabis, Conium, Ruta, and **Sulphur** may be used according to indications gathered from their characteristic symptoms in the Materia Medica, to prevent the formation of cataract. When once formed it cannot be removed by medicine; and an operation would scarcely be attempted on *animals*, except, perhaps, in some remarkable case.

Among the French both *couching* and extraction of the cataract have been performed; but neither operation is now much in vogue; although it could be performed, if deemed worth the trouble and expense, in a valuable horse.

144. **Blindness, How Prevented.**—Many horses, especially young ones, are rendered blind, in one or both eyes, by severe driving, or overwork. Where such severe driving or overwork has recently occurred, and there is reason to apprehend loss of vision, the danger may often be averted by the timely administration of *Arsenicum*, in six-drop doses, put on a little meal or sugar, and repeated morning, noon, and

night. Perfect rest, and a light and easily digested diet should be at the same time provided. In this way valuable young horses may be rescued from the danger of blindness incident to some recent abuse. When the overwork has been maintained for some time, it may be too late to prevent the consequences of such exhaustion of the nervous system; but the remedy above mentioned may be given in six-drop doses in the morning, and a like dose of Nux vomica at night.

145. **Amaurosis.**—A term implying darkness, or obscure vision, caused by some derangement of the optic nervous apparatus; and varies in degree, being either partial or complete, according to the amount of sensibility affected. When incomplete, the sight will be so impaired as to resemble gauze drawn over the eye. This affection frequently follows stomach staggers.

Symptoms.—The eye, on inspection, has a staring expression; the pupil dilated; the contractile power against light slow, or absent; the animal treads cautiously, and frequently throws the head higher than natural. Sometimes the eye has a glassy-bright appearance.

Treatment.—Nux vomica and Sulphur, or Calcarea c., in alternation, the Nux at night, and the Sulphur or Calcarea c. in the morning, in the smallest doses, are best calculated to prevent this disease, where a tendency to it appears. Should there be much dilatation of the pupil, or a staring expression of the eye, *Belladonna* will be needed. *Arnica lotion* will help when the disposition to this affection results from a mechanical injury. In this case, also *Conium* may be needed, for the less recent effects of a bruise.

146. **Glass-Eye** (Gutta Serena), is characterized by total blindness of one or both eyes, without any deterioration of brilliancy or transparency, or rather by unnatural brilliancy of the eye; it is occasioned by pressure on the brain, resulting in palsy of the nerve, which operates upon the retina of the eye, and may sometimes be overcome. The remedies which are appropriate for its treatment are: Arnica, Belladonna, Bryonia, Lachesis, Nux vomica, Opium, and Rhus.

147. **Warts and Callous Excrescences on the Eyelids** are best treated by *Nitric acid* and *Silicea.* See Materia Medica.

Dose.—Mix ten drops in a little water; a wineglassful may be given night and morning.

148. **Thickening of the Eyelids.**—Give *Silicea* or *Calcarea* in a similar manner.

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Medica:
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crescences sometimes form on the globe of
Fungoid projections in the transparent corr
dental abrasions or grow spontaneously.

Treatment.—These should be treated with
and night and morning a wineglassful of a m
sixth dilution in one pint of water should b
omit a week, and then resume, and so on till
drastis tincture may be used instead of the C

SECTION III.

AFFECTIONS OF THE N

152. Catarrh or Common Cold, Coryza.-
is acute inflammation of the mucous memb
trils. It is the same affection as that know
"cold in the head." It is attended by a se
the nostrils, increased redness of the Schne
of tears from the corners of the eyes, occas
the jaws, and a snorting cough with or with
turbance.

Catarrh in adult horses usually arises from
the management of the animal or of the st
sake of brevity, we may call preventible cau
at the time by sudden atmospheric changes.
brought into stables catarrh is of very frequ
occasionally found as a consequence of, or ac
sore throat, because the inflammation set up i
extends to the similar continuous membrane

Catarrh is commonly said to be epizootic
be feared, except where predisposing causes,
ventilation, render the animals susceptible o
frequent, as we might expect, during cold da

The premonitory symptoms are loss of ap
staring of the coat, a tendency to sweat up
little watery discharge from the nostrils.
toms are followed by slight feverishness, slig
somewhat hurried breathing, and a hot mou
ally constipated. In most cases the throat is

In the early stage of the feverish symptom

Common nasal gleet is usually a sequel of neglected catarrh or of influenza of a chronic character.

In catarrh the discharge usually proceeds from the lining membrane of the nostrils. In nasal gleet it usually proceeds from the lining membrane of the frontal or maxillary sinus, which has sympathized with and become involved in the inflammation existing in the neighboring parts. In many such cases the inflammation loses its acute character, and perhaps subsides altogether in its primary seat, *i. e.*, in the membrane of the nostrils; but it lingers and becomes chronic in the lining membrane of the above-mentioned sinuses. There is then established a discharge known as nasal gleet. This result is especially apt to ensue in animals in a weakened condition.

Subsequently the membrane becomes thickened, and may continue to pour out mucus for a length of time. The discharge is usually intermittent, because the sinus does not overflow, except when it is full.

Again it may often happen, that the animal, either by putting his head down to feed off the ground or by violent effort of sneezing, may half or completely empty the sinus; and then after the relief thus given by nature there will be an intermission in the discharge, until the sinus has refilled. In other cases the opening of the sinus may for a time be blocked up by a plug of inspissated mucus.

The fact and seat of any such collection of matter may be ascertained with some degree of, but not with perfect precision by gentle percussion. A dulness of sound indicates pus or fluid in a sinus. Such dulness will be apparent by carefully comparing the sound produced by percussion against one sinus relatively to another.

Nasal gleet may also proceed from chronic inflammation and thickening of the lining membrane of the nose.

Chronic discharge from the nose is rather a symptom than a disease, but it deserves especial notice, not as a manifestation of catarrhal affection, but as the result, or after-effect, of acute inflammatory disorders, particularly as the neglect of it frequently terminates in glanders (amongst horses), or hoose (amongst cattle); wherefore it is most important that the distinction should be clearly defined. It is not necessarily connected with cough, or other catarrhal symptoms, and the simultaneous occurrence, or gradual development and continuance of cough, is a serious symptom. The consequences may issue in any of the severer disorders which affect the respiratory apparatus. In its local adaptation it consists of a chronic inflammatory action in the membranes of the nose.

Symptoms.—The horse is subject to an accumulation or discharge of very thick, discolored and mattery phlegm, often stained by the food—as, for instance, green, if the animal be at grass,—or yellowish, if manger fed,—or sometimes even bloody. There is, however, a natural and healthy secretion of phlegm in the nose, and it is therefore its excess which is morbid. If snorted out in quantities, from time to time, or continually oozing, or especially if offensive, or matter predominating, it is of a still more serious character. The continuance of it generally develops constitutional disturbance, the breathing becomes difficult, the pulse hard and full—or, still worse, quick, small, and wiry; and we may expect the appearance of worse derangement if not arrested. Oxen, cows, &c., are subject to a similar accumulation and discharge of thick phlegm, mingled with matter, which is generally offensive (contrasted with the natural fragrance of the breath), and which provokes much soreness of the nostrils. Primarily no cough is present, nor is there constitutional derangement. Both of these classes of symptoms would be of serious aspect.

In young oxen and cows, coryza is sometimes met with of a very severe form. It begins with the ordinary symptoms of nasal catarrh; the discharge, however, is bloody, mattery, and offensive. The nasal membrane in the last stage sloughs off; the horns and hoofs also drop off. There is great prostration throughout, and convulsions very generally come on immediately before death. This disease has been termed MALIGNANT CORYZA and also *ox glanders*.

In the pig, the general symptoms are identical with those of the same disease in other animals.

Place the animal in a clean, well-ventilated box, clothe him warmly, and feed him on mashes for a few days. In order to have the nose cleansed out, cause him to breathe the fumes of vinegar by pouring some of the fluid on a red-hot brick placed in front of his head on a shovel. This will make him snort and sneeze, whereby a large quantity of matter will be expelled. The fumigation should be used at least night and morning so long as the discharge is copious.

Dogs are very liable to coryza, from exposure to cold. The symptoms do not differ materially from those of the horse. Bronchitis and inflammation of the lungs are apt to supervene. Distemper in dogs usually begins with symptoms of cold in the head.

Causes.—Acute inflammations; or exposure to transitions of temperature; impure air; or, in respect of cattle (especially), the irritation produced by dust, or other extraneous matters attracted in dry weather by inspiration, and deposited in the nostrils. Amongst cattle it is periodical, returning with the autumn, and disappearing (sometimes of its own accord) in the spring.

154. **Treatment.**—*Aconite*, ten drops, may be mixed in a pint of water (see p. 34), and a tablespoonful be given every four hours in the first stage of catarrh fever, to horses, and smaller doses to dogs and other animals. Aconite is indicated by dryness, stuffing and redness of the nose, quickened pulse and breathing, hot and dry mouth, thirst and loss of appetite, all symptoms denoting a febrile state.

Belladonna will be indicated by inflammation and redness of the eyelids and eyes, flow of tears, soreness of the throat and difficulty of swallowing.

Dose.—Similar to Aconite.

Arsenicum.—Profuse discharge, great debility, loss of appetite, offensive discharge from the nose, which also tends to become chronic, rawness or excoriation of nasal borders; attacks follow exposure to wet and cold.

Bryonia.—The attack comes on in dry, cold weather, or from exposure to dry, cold winds; difficulty of breathing.

Dose.—Similar to Aconite.

Hydrastis c.—Copious discharge from both nostrils, adhering like glue; the whole of the nasal mucous membrane is vascular; submaxillary glands enlarged; rough, harsh, unhealthy coat; low in condition and feeble; bowels costive; urine high-colored; pulse 44, and feeble; bad appetite. This case, reported by Dr. James Moore, was cured by giving ten drops of the first dilution of Hydrastis c. three times a day, and fumigating the nostrils with a solution of the same drug.

Kali bichromicum.—"Pulse and respiration slightly quickened; discharge of thick, yellowish matter from right nostril; accumulation of greenish pus on nasal alæ; horrible fetor; the box (stall) being ill-ventilated, the stench is intolerable and sickening; the right submaxillary gland is swollen and tender; appetite good." *Kali bich.*, 1st dilution, ten drops night and morning, was given to this case, and the nostrils fumigated with the same drug. The discharge began to decrease from the fourth day, and the horse *was* discharged cured in one month.

Mercurius.—Sneezing, coryza, sore throat; the nasal secretion becomes thicker, or smells foul; cough frequent, worse at nights; nostrils red, inflamed; glands of throat swollen and tender. In such cases Belladonna and Mercurius have been given in alternation every six hours, with great advantage.

syringing out the cavities with warm water. Then, three times a day inject *Hydrastis lotion*,* and give five drops of *Hydrastis* three times a day. *Mercurius*, *Kali bichromicum*, and *Arsenicum* are of service in such cases, in the same doses.

156. Glanders.—This malignant disease is at once identified, in its incipient stage, by the comparatively clear watery appearance of the nasal discharge, as also characteristically by its peculiar adhesiveness. Sometimes it issues from one nostril only, sometimes from both, but it is always fluent—not accumulated and discharged in masses, from time to time, and with an effort. This discharge is sometimes barely noticeable, and may continue for very many months without farther progress in the development of disease, and without any apparent constitutional derangement. Yet, from the first, it is highly infectious, virulent, and malignant. By degrees there is an admixture of matter with the discharge.

At first, there is often no enlargement or swelling whatever in the glands; but subsequently, according as the discharge takes place from one or both nostrils, the glands (lymphatic, submaxillary glands) of the nether jaw will be affected on the one, or on both sides—never, however, permanently, with general and diffused swelling of the adjacent parts, but with swelling of (sometimes several) small kernels close to the bone; the membranes of the nostrils are characterized by a peculiar color, varying from greenish-blue to deep purple; and actual deep ulcers, with elevated margins,—at first small and gradually extending,—will be developed upon the membrane of the nose (not as in cancerous ulcer of the muzzle slightly within, but yet on the extending part of the integument of the muzzle);—the presence of these ulcers can be distinguished by the touch; some symptoms of general disease are now developed, and as the discharge thickens with matter, becomes bloody and putrid, the strength, appetite, and condition will rapidly fail; the coat becomes staring, rough and dull; the ulcers will multiply, the hair will fall off, the belly will be retracted, the respiration will be accompanied with a peculiar sound, as if the breath were expelled or inhaled through a multiplicity of little valves, and cough will supervene. (Compare "Strangles" and "Catarrh" for the distinctions; in the latter stage of catarrh there is sometimes a stickiness in the discharge, which might mislead, unless all the attendant circumstances were duly considered.) Tubercular disease of the lungs is the last stage of glanders; and glanders and farcy (compare "Farcy") will ever be liable to combine, being very closely associated. It is, however, very essential to distinguish the first manifestations of glanders, lest it be spread, not only throughout the whole of one team, but throughout many succeeding teams, through the excessive virulence of the infecting malignancy.

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* See "Medicines for External Use," at the end of this work.

This disease is seated in the lining membrane of the nostrils; may supervene on catarrh, influenza, bronchitis, inflammation of the lungs, or strangles; more especially that form where the swelled gland does not suppurate, but becomes hard and cancerous. It would seem to be induced by bad ventilation, impure air, and impaired condition; but, more than all, infection is the chief source. If not arrested, it always proves fatal.

Symptoms.—Early Stage: Discharge, from one or both nostrils, of a sticky fluid, about the substance of white of egg, but grayish in color. Smell more or less offensive. The nasal membrane has a leaden hue, and soon becomes ulcerated. Submaxillary gland (generally one first) feels hard, enlarged, fixed. The nasal discharge may be confined to that side of the gland affected. There is no cough, unless complicated.

Second Stage: The ulcers in the nostrils are generally visible, and often the discharge becomes thick, and smells very foul. There is general debility of the system; coat stares with a deaden look; mane and tail come off upon the slightest force.

157. **Farcy,** which is frequently attendant upon confirmed glanders, or which is aggravated by the complication with glanders in the advanced stage, particularly when the vessels of the head are most distinctly affected, is, externally, a very distinct disease—with the occasional manifestation of a variety of indications which characterize other diseases, such as eruptions like those of mange, apparently œdematous swelling of the legs, affections of the foot and heel (cracking), wasting away of the flesh, as in phthisicky disorders; putrid discharge from the nose, as in glanders. The specific nature of the disease, however, consisting of the induction of a poison of a peculiar kind by the absorbent vessels, the characteristic features are: the development of little knotty tumors or protuberances, "farcy-buds," along the course of these vessels, and which are particularly developed about the numerous valves which occur in the course of such vessels, so that there is a general cordy distension of the vessel throughout, with occasional intervening lumps: these are called farcy-buds or buttons;—the disease gradually advances; the buttons become more numerous, more promi-

nent (being at first almost imperceptible), and hot, and generally excessively sensitive to the touch; ulceration (or occasionally induration) subsequently ensues; the development of these manifestations is sometimes preceded, but always followed, by rapid loss of appetite and condition and by the staring, rough, unhealthy appearance of the skin, which characterizes most severe constitutional disorders. The muzzle, front part of the head, neck, and inner side of the thighs, are first (or alone) affected with the tumors; but sometimes there is a sudden unaccountable enlargement of the legs (or of one of the hind legs), the limb affected being almost incapacitated, and the symptom being accompanied with considerable constitutional disturbance, whereas but a few hours before there was no appearance of ailing. If the ulceration is unarrested, the tumors extend, become multiplied, the groin and fore-legs are affected, and ulceration follows the course of the absorbents in every direction; whereas the appearance of glanders completes the deplorable and hopeless condition of the animal.

Glanders and Farcy are really modifications of the same constitutional disease. Inoculation with the matter of glanders or farcy or transfusion of the blood may produce either one or the other disease in a sound animal. They result from the presence of a poison in the blood, attended with a peculiar specific inflammation. This poison appears to arise from degeneration of some of the constituents of the blood; but in farcy the virus seems to be in a less matured and less virulent stage than in glanders. Hence, farcy is in some degree amenable to treatment, whilst in glanders the disease nearly always proves intractable.

Farcy is often combined with glanders, but is a disease of the lymphatic system, its more common seat being the inner side of the thigh and leg, of the hinder extremity. It may attack the fore-legs, or the neck and lip. A small lump, named a farcy-bud, appears, varying in size; some, the size of a small nut, inflame, ulcerate, and open up a sore, which may extend to the size of a florin; from this broken surface a fluid exudes. At first these buds are confined to the leg, but soon extend to various parts of the body. When they approach the head and neck, glanders will also appear. Farcy is more readily cured than glanders, although inoculation of the same virus will produce either or both diseases. Between the farcy-buds, hard cord-like swellings may be felt; these are the distended, inflamed lymphatic vessels. Farcy may be attended with dropsical swelling of the legs; and is then called Water Farcy.

In some cases, a peculiar slipping, or cracking of the joints may be heard when the horse walks.

buds a solution consisting of one drachm of *Kali bichr.* and sixteen ounces of water."

But even this remedy is surpassed by *Carbolic acid.*

Carbolic Acid.—The well-known superior efficacy of this recently discovered antiseptic in destroying infection, renders it indispensable in glanders. This remedy has actually cured glanders in man, being the only one ever known to do this, and has proved equally capable of destroying the virulent germs in infected animals.

When cold, pure carbolic acid appears in the form of minute crystals, these melt, when slightly heated, in their own water of crystallization; one drop of the solution being considered equal to one grain of the solid crystals. In water it dissolves with equal readiness, whether liquid or solid, and in any proportion.

Ten grains (or drops) of Carbolic acid should be mixed in one pint of soft water, and the whole given to a horse affected with glanders in one day, dividing the solution into four parts or doses. At the same time make a lotion by dissolving twenty grains (or drops) of Carbolic acid in one quart of soft water, and with this carefully wash out the nostrils, and bathe the affected parts. If there is reason to believe that the glandered surface extends beyond immediate reach up the nostrils, the lotion may be injected into them with a four-ounce syringe.

Where the disease is properly called Farcy the *Carbolic acid* should be given as advised for glanders; and the farcy-buds bathed with the same *Carbolic acid lotion* that is advised for injecting the nostrils in the kindred disorder, and in the same manner that Dr. Moore bathed the *farcy-buds* with the solution of Kali bichromicum.

In diseases so grave as these, the physician must exercise his own judgment as to the size and repetition of the dose, according to the size, age, and condition of the patient. It is certain that this acid will destroy the virus of glanders, both externally and internally; and it should be used with no sparing hand, as well to prevent the infection from spreading as to save, if possible, those already infected. Other drugs, like *Sulphurous acid* and Kali bichromicum, prove valuable antiseptics; but none can be compared with *Carbolic acid* in destroying the virus of glanders, and in the treatment of this disease in man and beast. All sponges, brushes, and other articles employed about a glandered horse should be burned or deeply buried; as it would be more trouble and expense to disinfect them, even with this antiseptic, than they would be worth.

In addition to the specific remedies with which the disease must be antidoted, it is necessary to take every means to put the animal in good condition. As both glanders and farcy, when not the result of direct infection, come from overwork, poor fare, and damp, foul, and in other respects unhealthy, stables, so it is of the first importance to change all this. The diseased animal of course must remain at rest; his food should be nourishing and easy of digestion. *Carrots* and other green food and esculent roots may be particularly recommended.

159. Poll Evil.—Poll evil, as its name imports, occurs on the top of the head, just posterior to the ears. In its earliest stage, it is simply a swelling caused usually by the pressure of the head collar, or sometimes by an accidental blow, such as that which a horse may give himself, especially if frightened, on entering or quitting a stable through a low doorway.

If the cause, whether it be pressure or a blow, be continued or repeated, inflammation will probably set in. As a result of the inflammatory action, the wound or injury frequently suppurates, and after a time abscesses will form around the attachments of the cervical ligament.

From the peculiar position of the injury, the matter has no depending orifice; and hence it generally happens, that unless artificial assistance by free incision is given for the escape of the matter, it will burrow downwards among and under the ligaments, which support the head. Among these it is apt to form large and deep sinuses and fistulas.

These sinuses often extend down to the bone. The offensive smell of the matter contained in them will indicate this extension. If the matter is suffered to remain long in contact with the bone, it will probably cause caries in that tissue.

With moderate care and attention, no case of real poll evil ought ever to occur. Timely removal of the exciting cause will always check and prevent its development.

When however the disease by neglect and long-continued recurrence of the cause has been suffered to develop itself, the treatment consists in laying the part open with the knife, so as to afford a depending orifice for the matter.

When the injury is deepseated, it is good practice to assist the escape of the matter by inserting a seton through the sinus, with a view of affording it a depending orifice.

If sinuses have formed in different directions (which may be ascertained by the probe), each sinus must be laid open, as far as practicable, from its bottom by the knife, and treated as recommended above.

Great care must be taken to keep the wound open, until it has thoroughly healed from the bottom; and for this purpose it will be necessary to insert into it a pledget of tow covered with digestive ointment. As the ligamentous tissues, among which the sinuses form, are of very low reparative power, the process of cure is generally very tedious.

When the wound is well, great care must be taken to guard against recurrence of the causes which produced it.

In cases which have been long neglected, caries of the bone occasionally supervenes. From its position and from other causes, this further development is so difficult to treat, and the process of cure is so tedious and uncertain, that the better plan in the author's opinion is to accept the loss and to destroy the animal.

160. Treatment.—*Aconite*, ten drops mixed in one pint of water, and a wineglassful given four times a day, may be needed to remove the primary inflammation.

Hepar sulph., in a similar dose three times a day, will be useful tc arrest the tendency to suppuration, and stop the flow of pus after the abscess has been opened.

Silicea night and morning, in doses of six drops mixed in a little water, may cure the (fistulous) disorder, after Hepar has exhausted its action.

Calendula tincture, mixed with nine parts of water, injected into the opening made for the free issue of the matter or pus already formed, will exert a most excellent healing influence, and obviate the necessity for the stronger injections of dilute *chloride of zinc*, and the application of *lunar caustic* recommended by some allopathic and other authorities.

161. Fistulous Withers.—Fistulous withers are similar in their nature and require much the same treatment as poll evil. They are nearly always caused by pressure from the saddle, or collar, or by injuries.

In most cases the mischief is at first very slight, and a day or two's abstinence from work with a little alteration of the saddle or collar will generally effect a cure and prevent recurrence. If the skin is tender, a salt-and-water dressing may be applied.

When however the cause is continued or repeated, the tissues under the skin become inflamed, and the cartilaginous pads of the heads of the spines of the vertebræ may be injured. If such should be the case, fomentations must be applied in the first instance to reduce the inflammation. If these fail, as they often do, in bringing about resolution, matter will probably form under the skin.

Unless a free opening is made for its escape, it will burrow in, under, and among the muscles, tendons, and ligamentous tissues which lie on each side of the spine or withers, and will form sinuses. The treatment in such cases is exactly the same as that of poll evil. Nothing answers better than the seton recommended above.

Caries of the spinous processes of the bones of the vertebræ occasionally supervenes. It will be indicated by the offensive smell proceeding from the sinuses. Unlike the similar occurrence in poll evil, this further development is easily treated; and a radical cure without any injurious result may generally be effected by removing the injured portions of the bone by the pincers. The parts, as a general rule, heal over favorably, and nothing more than a slight hollow will be noticed about the withers.

Treatment.—*Arnica* tincture, externally as a lotion, one part to nine of alcohol, may be applied twice a day with great advantage, especially in recent cases; when the tumor bursts, or is opened with the knife, this remedy mixed with nine parts of water, instead of alcohol, may be injected. And, internally, the Arnica may be given in ten-drop doses three times a day.

Conium maculatum comes next in order in the treatment of this disorder, considered as the result of prolonged compression or contusion of the parts. Six drops of this remedy may be given four times a day. When the above-mentioned remedies fail to arrest the disease, it becomes similar in nature to poll evil, and requires a like constitutional treatment, in addition to the medicines advised in poll evil.

Mercurius, thrice daily, in six-drop doses, may be employed if the suppuration is profuse, and Hepar does not help.

Asafœtida will be indicated when the pus is fetid.

Arsenicum when the edges of the ulcers are hard and everted, accompanied by pain and inflammation, and the pus exhales a bad odor. This remedy may be given as advised for Mercurius.

SECTION IV.

AFFECTIONS OF THE MOUTH.

162. Aphthæ—Thrush.—Thrush is occasionally met with in the horse, although less frequently than in other animals. It consists in an eruption of small vesicles on the mucous membrane lining the mouth. When the fluid in these vesicles is discharged, small ulcers are observed, and this ulcerated condition may be somewhat widely spread from the small ulcers running together. The lining of the mouth peels off, leaving below a tender surface, which prevents the animal from eating as usual. On examining the mouth, these appearances are observed on the tongue, lips, inside of the cheeks, and gums. In the horse, thrush is sometimes accompanied by strangles. It arises in all cases either from the local irritant action of improper food, or acrid plants, or as the result of constitutional disorder.

In oxen, thrush is often observed. The symptoms are the same as those found in the horse, with the addition of a more profuse discharge of stringy slaver from the mouth. Thrush is *not* "foot and mouth disease:" it is not contagious, does not spread like an epidemic (epizootic in the lower animals), and is not associated with disease of the teats and feet; by these differences simple thrush may be known from the more serious murrain. It should also be distinguished from the rinderpest, in which disease there is a peculiar thrush-like condition of the mouth and lips. Oxen do not chew the cud as usual.

Amongst sheep this disease appears to be either independent of or intimately connected with foot-rot. Amongst cattle it is very rarely a disease of any consequence, consisting of the development of vesicles and also of pustules throughout the mouth; when they burst, however, they generally leave but very insignificant and superficial ulceration, even if the sores should become confluent. The constitutional disturbance is very slight, and the appetite generally unimpaired, although the soreness of the mouth impedes both feeding and rumination for the time. Amongst sheep it is not more serious, except as the accompaniment of foot-rot, when it requires additional attention; but even then may be readily checked if taken in time, and before the discharge has become offensive and ulceration has ensued. Independently of any other affection, thrush (which is not serious unless neglected) consists in the development of numerous vesicles in the mouth, with more or less discharge of adhesive phlegm; the appetite is not so much impaired (unless fever run high), as the feeding and ruminating, rendered painful by the soreness and the constant motion of the animal (which is not indicative of feebleness, but simply of uneasiness, and, as it were, a desire for something), sufficiently shows that there is no great deterioration of strength.

The principal and usually sufficient remedy is—

Kali chloricum.—Mix ten drops in a pint of water; give a tablespoonful three times a day, and as often wash out the mouth with a solution of ten grains of *Chlorate of Potassa* to the ounce of soft water, and the vesicles and minute ulceration will quickly disappear. Any remaining symptom may be treated as directed under Blain, which see.

Acidum muriaticum, Acidum sulphuricum, and **Borax** may be employed with advantage in the aphthæ which sometimes attacks lambs in consequence of change of food, or on taking cold. Two drops of the selected medicine should be given night and morning, mixed in a little water or meal.

Aphthous ulcerations sometimes appear in the throat of the dog, causing distress and preventing the animal from swallowing. These are readily cured by a few doses of *Mercurius* night and morning. *Belladonna* may be needed instead if there is some external swelling of the neck.

Dose.—These remedies may be prepared and given as above advised for Kali chloricum.

163. Blain, Gloss, Anthrax.—*Blain* is most prevalent amongst cattle; it occurs, though more rarely, and in a less virulent or critical form, amongst sheep; and in a still more tractable degree, or rather as a milder disease, amongst horses. In the two former cases it is clearly contagious,* or communicated by infusion; and in the majority of cases it may be considered of epidemic or atmospheric origin. Amongst horses it appears far more in the light of a local inflammation, which becomes constitutional if neglected. The treatment is so far identical in all cases, that the administrator's discretion, assisted by the statement of specific effects, will sufficiently guide him in the choice from the medicines enumerated to cover all cases.

Symptoms of Blain.—It consists of inflammation, of which the membranes at the base of the mouth (or the sublingual glands) are the primary seat. We may observe an increasing listlessness or uneasiness, and an abstinence from food (not always occasioned by lack of inclination to eat, as is evinced by the eagerness with which the animal will devour soft and liquid mashes, such as gruel), rumination decreases, and is even suspended; considerable fever follows, and constipation exists from first to last. Externally, the head and neck becomes swollen, and sometimes very much enlarged; profuse drivelling of saliva, which from being clear, watery, and without smell, soon changes to a thick mattery and bloody fluid with intense fetor; the tongue is at first arched, so as to give the appearance of being swollen (which is not an early symptom), caused by the tenderness of the nether part and margins of the tongue and surface being covered with extensive vesicles of various hues, from vivid redness to deep and malignant-looking bluish-red; the respiration becomes difficult and laborious; the bladders expand, suppurate, and develop deep and angry ulcers; these are succeeded by more, the tongue becomes really swollen and inflamed, and gangrene is not slow to manifest itself in the ulcerations; incision causes no demonstration of pain, and is followed by no discharge of blood; typhoid or putrid fever usually terminates the disease with life. Blain is perfectly curable in its earlier stages.

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* The supposed infection of sheep without contact or infusion of the poison, probably arises from their nibbling in places on which the infected saliva of the blained sheep has been dropped.

164. Treatment.—Mercurius and Arsenicum have been found most effectual in this affection.

Mercurius v. will be indicated by the whitish pustules, canker, ulceration on tongue and mouth, reddish and offensive discharge, and especially *profuse flow of saliva.*

Arsenicum will be required by threatening gangrene, excessive fetor from mouth, prostration, and even drowsiness.

These medicines should be administered in doses of ten drops once in three hours. These doses are calculated for cattle; for sheep and pigs, they should be one-half or one-fourth this size. And half way between the times for giving the medicine, let the mouth be carefully washed out with the *Carbolic acid lotion*, as directed under the head of Glanders.

Carbolic acid, two drops (or grains) in a little water once every two hours, may be given if the disorder does not appear to yield to the above-mentioned remedies, which may be given in alternation, or separately, according to the judgment of the attending practitioner.

Precautions such as are recommended in the treatment of glanders must be observed to prevent this disease from spreading by the infection being communicated to other animals. Equal care must be taken to avoid its coming in contact with any sore places on the hands of attendants.

165. In Dogs.—A disease known as the "blain" is sometimes observed in the dog, but whether or not it be identical with the malady under consideration is doubtful. The symptoms are somewhat analogous. The tongue is enlarged, and subsequently covered on its sides and under surface with large vesicles, of a red or livid color, which may end in irregular, and even gangrenous ulcers. The attack often begins without any apparent cause or previous illness. The disease is most common in spring and summer, and sometimes prevails as an epizootic. In addition to the above symptoms the breath is highly offensive, the saliva profuse, purulent, and perhaps bloody, and the appetite impaired.

166. **Treatment.**—*Mercurius* and *Arsenicum:* The former is to be given first, in from four to ten drop doses, four times daily, when the tongue is inflamed, enlarged, and ulcerated; and the latter in the same way when the ulcers assume a livid tint, and when symptoms of low fever and debility supervene.

For the last symptoms *Kali chloricum* is also a remedy of great value in a like dose.

It may be advisable in some cases to open the vesicles freely, and then to apply *Calendula lotion** to heal up the open ulcers which remain.

The weak condition of the dog, and its inability to swallow, in consequence of the swollen and painful state of the tongue, may necessitate the administration of beef tea or wine with a spoon. Fluid food should be within its reach, so that it may sip up some when inclined.

167. **Canker** sometimes occurs in the dog's mouth, and may become similar to scurvy in man. Old stumps and loose teeth should be extracted; if the jaw is diseased, the necrosed portions must be removed. The system must be sustained by nourishing soups, as directed under Blain, since solid food cannot be taken.

Treatment.—**Kali chloricum** (chlorate of potash), twenty drops of the first decimal solution three times a day for two or three weeks. This may be followed, if necessary, by

Arsenicum, in doses of from four to six drops, night and morning.

168. **Strangles.**—This is a disease to which young horses are subject, and which is rather of a tedious than a dangerous character (unless much mismanaged), except as incidental to fat pigs, with which it is most rapid and fatal. Amongst cattle it is met with in the modified form of strangullion, which consists of inflammation of the parotid gland, and which may be very serious in its symptomatic relations, as, for instance, if attendant upon disease; whereas, amongst sheep there is a rare disease affecting the throat, and far more analogous to the

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* See list of "Remedies for External Use," at the end of this book.

strangles of horses. The majority of horses have strangles once, but they very rarely, if ever, are attacked a second time.

Symptoms of Strangles amongst Horses.—The first symptom is a cough, without any distinctive feature of its own, but qualified by the prevalence of yellowish, mattery, inodorous discharge from the nostrils, and by drivelling from the mouth, the discharge of stringy saliva being occasionally profuse, whilst the characteristic feature, viz., the swelling of the gland, in the channel between the jaws, and underneath the throat, becomes gradually developed, which renders mastication and deglutition painful (which increases until the parts under the throat are involved in one general tumefaction, gradually discovering the secretion of matter in the centre, and, lastly, bursting and discharging), and with which an increase of febrile action generally diminishes the appetite to a certain degree. The fever increases, and with it a continual thirst, attended with so much difficulty and suffering in deglutition that, although the animal evidently longs to drink deeply, it only swallows one or two mouthfuls, and is immediately seized with a suffocative fit of coughing. The *ox, cow*, &c., are subject to swelling of the parotid gland, which renders the muscular action of the throat and jaws so painful that the animal will neither feed nor ruminate; there is increased development of heat about the throat and adjacent parts, and thence up to the ears, and the sensitiveness to the touch is excessive; as the swelling develops itself the febrile symptoms increase, and the respiration becomes seriously affected—very painful, difficult, impeded, and laborious, and often stifled, as if suffocation were imminent. *With pigs* the disease assumes particular features, which characterize it especially as a disorder of a somewhat different nature; the glands beneath the throat are also affected, but the general swelling of the neck, the intense and rapid prostration of strength, the fixed and immovable position of the head, the small, wiry, accelerated, and irregular pulse, the suffocative and rattling, hoarse, and sometimes sonorous respiration, the protrusion of the tongue, charged with glutinous, slimy saliva, and the eventual mortification, are features peculiar to the species.

169. Treatment.—*Aconite*, six to ten drops every four hours, when the patient appears to have a common cold, and is feverish, restless, uncomfortable, or dull, mopish; where the coat is rough, staring; and there are loss of appetite, mouth dry and hot, pulse accelerated, cough occasional, swelling about the glands of the jaw.

Belladonna.—If the fauces are red, inflamed, and dry, give Belladonna, six drops, in a little water, or on a little meal or sugar, once in three hours; or ten drops of this, or either of the other remedies here mentioned, may be mixed in one pint of water, and a wineglass or tablespoonful given for a dose, according to the size of the animal.

Hepar s. c., ten drops every three hours when the following symptoms present: The fever is considerable; throat intensely inflamed, extending to the mouth and nose; swelling of face and head; breathing difficult, and gradual pointing of swelling, indicating abscess. Hepar exerts a good influence in promoting the suppuration of the glands.

Mercurius vivus, ten drops every three hours, when, as occasionally occurs, the abscess bursts internally, and the pus is discharged through the nostrils, or may plug up the air-passages, when the animal will become much distressed and threatened with suffocation.

Sulphur and **Arsenicum** have been recommended to be given in alternation, the former in the morning, the latter at night, in six-drop doses. If the abscess does not burst, and the pus is absorbed into the system, the horse will continue sickly, and the disease may show itself, sooner or later, in different parts of the body.

Regimen.—Pure air, without chill or exposure to drafts, scrupulous cleanliness, protection from inclemency of weather, avoidance of sudden changes of temperature, and weak, thin, and warm, but not stimulating, mashes (such as gruel) in the place of solid food; water somewhat warmed.

170. Inflammation of the Mouth and Tongue in Horses—Glossitis.—It has been known to follow the internal administration of turpentine in too large doses, and it occasionally arises from other more obscure causes. The whole of the mouth is more or less affected with redness, pain, and swelling, and throughout the progress of the disease there is much febrile excitement. In course of time, the lining membrane of the mouth peels off, and the parts are left raw and sore, and extensive ulceration and even gangrene may result. There is copious discharge of mucus. In some cases the tongue is more severely inflamed than the other parts of the mouth—then it is swollen and hangs out, and, in bad cases, matter forms in it, or it is left hard, stiff, and enlarged. When the tongue is much swollen, swallowing is difficult, and the breathing so impeded as to threaten choking. One of the most frequent causes of inflamed tongue in the horse is injuries resulting from violence in giving balls, or from the animal biting his tongue.

In oxen, the causes are the same as in the horse, and it may also follow the administration of hartshorn given to cattle suffering from hoove. The symptoms and treatment of this disease in the ox and other animals are those given above and below respectively.

171. Treatment.—*Aconite* should be given at first when the mouth is dry and red, and the animal feverish, and the tongue swollen and painful.

Arnica is indicated when the inflammation has resulted from injuries. *Arnica lotion* may also be applied locally.

Mercurius may be given with good results when the tongue is hard and much swollen, and when there is great dribbling (salivation), difficulty of swallowing, and redness and rawness of the mouth generally.

Lachesis will be required if the tongue is swollen, sore, inflamed, and difficult of protrusion, and especially if there be any dark discoloration of it (black tongue).

Arsenicum will be indicated by similar discoloration without swelling, threatening gangrene.

Hepar may be needed, where matter is forming, to hasten the suppurative process.

Nitric acid has been found useful in dry inflammation of the tongue.

Carbo vegetabilis will be required for the indurations which often follow inflammation of the tongue.

Conium, Arsenicum, Lycopodium, Belladonna, Acid. sulphuric., and **Silicea** may be consulted in the Materia Medica.

These remedies may be given in six-drop doses every two or three hours to horses and cattle, proportionately smaller doses for sheep, dogs, and swine. These doses may be dropped on a little sugar, and so placed upon the tongue to dissolve. Should the great swelling of the tongue threaten suffocation, it may be lanced superficially.

172. Protrusion of the Tongue in Horses, Oxen, and Dogs.—This is a symptom of paralysis, weakness of the muscles of the tongue, and of injuries. Paralysis of the lips on one side sometimes coexists, resulting from local injury to the nerves distributed to the parts. The lower lip then hangs down, and food is picked up with difficulty; there is also more or less slavering. Of course, the tongue is very liable to be severely injured when it falls between the front teeth, and repeated injuries of this kind may result in troublesome wounds, or ulcers.

In dogs it is not unusual to see the *tongue lolling out of the mouth.* This affection results from some weakness of the nervous system. Sometimes the protruded tongue inclines to one side.

173. Treatment.—It has been recommended to clip off the tip of the tongue when it appears to be protruding because too long. But this is never a very safe expedient.

Arnica may be needed, if the weakness seems to result from mechanical injury.

Belladonna may be given in the morning, and

Nux vomica in the evening, in chronic cases of a paralytic nature apparently, or the *Nux v.* may be given by itself twice a day, and its use persevered in for many weeks, even if no improvement set in before.

Dose.—Six drops for horses; four drops for dogs.

174. Salivation.—Excessive flow of saliva from the mouth may be caused by eating some kinds of grass or plants, e. g., *Lobelia inflata;* by inflammation of the mouth and salivary glands, and by mercurial poisoning. The two former causes are common to horses, cattle, and sometimes to sheep. When resulting from green food in the field, of whatever kind, a change of diet will be advisable; and a few doses of *Mercurius*, or *Nitric acid*, given night and morning, will remove the difficulty.

Dose.—Mix ten drops in a pint of water, give one or two tablespoonfuls, according to the size of the animal.

Salivation from *mercurial poisoning* is not unusual in dogs, especially those to whom some mercurial ointment has been applied for the removal of mange or other skin diseases. Hundreds of dogs are said to have been destroyed in this manner.

The effects produced by Mercury vary in severity with the quantity administered; and the effects are precisely the same whether the drug is swallowed or absorbed into the system by the skin. The gums are tender, swollen, spongy, and red; the teeth are discolored and loose; the breath is peculiarly fetid,—this is a characteristic sign; saliva dribbles freely from the mouth; the glands at the jaw are enlarged, hard, and painful; there is no desire to eat, but great thirst; the mucous membrane of the mouth may be more or less ulcerated, especially under the influence of large doses. When the lining of the coat of the stomach and bowels is inflamed, there are frequent retchings, the rejected mucus being tinged with blood, and the stools are fluid and bloody. The hair falls off and is seldom reproduced; irritative fever, debility, tremors, convulsions, and paralysis appear in quick succession and destroy life. Even in the most favorable cases recovery is slow, and long after both the teeth and breath give evidence of the havoc which the Mercury has committed, and of the difficulty encountered in ridding the system of the mercurial poison. The hair, too, seldom, if ever, grows as long as formerly.

175. **Treatment.**—*Chlorate of Potassa* is the proper antidote for mercurial poisoning and salivation. This can be procured at any drug store, and ten grains should be dissolved in one pint of soft water, and one tablespoonful given to a dog four times a day. When the profuse flow is abated, the medicine may be given twice a day only; or longer continued once a day for the remote effects of the poison.

Hepar, four drops night and morning, may be given for the chronic effects of the mercurial poisoning, especially when the skin is still diseased.

Nitric acid may be given instead, if the throat and mouth present an appearance of chronic inflammation; and especially if there are ulcers, or excoriated spots in the fauces.

CHAPTER IV.

CATARRHAL DISEASES, AND DISORDERS AFFECTING OR CONNECTED WITH THE RESPIRATORY APPARATUS.

SECTION I.

176. **The Horse Distemper of 1872.**—The autumn and winter of 1872 will long be remembered for the Epizootic, or Epidemic Catarrh, which, taking its rise in the British Provinces, gradually spread over the whole United States, causing great interruption of business and destroying some thousands of horses. This distemper seemed to partake of the nature of a malignant catarrh or influenza, which, commencing in the head, extended to the throat and bronchia, and finally involved the lungs. But in many cases the miasm appeared to have affected the respiratory apparatus from the very first, and the *short, dry, barking cough* gave the earliest notice of the onset of the disorder. Mules and horses suffered alike, and in some sections the disease appeared to travel along the line of the canals, and was thus borne successively from place to place through the country. But, independent of this local conveyance, there is no doubt that the contagion of this

spend much of its power in exhausting the vital forces; and to this manifest weakness the loss of food greatly contributed. Hence it happened that all the animals first taken, which, in the prevailing ignorance of the exceedingly debilitating nature of this new disorder, were *actively treated* (with strong medicines, and especially by bleeding), quickly died!

The disorder seemed to run a regular and definite course, at least in those milder cases in which, from absence of necessity for active interference, an opportunity was afforded for studying its natural operation. At first the cough, dry and barking, or short and hacking, gave notice of the onset of the new disease. This would continue for a few days, more or less; then the nose would commence to run, the head would hang down, and the animal refuse his feed, especially grain. Next, the catarrhal affection manifested itself in the bronchia, and the cough became more loose and hoarse, or wheezing. An evident shortness of breath proved the obstruction of the bronchia; this difficulty and insufficiency of breathing became more severe as the case advanced, and was accompanied and proclaimed by the abdominal respiration already mentioned. And in fatal cases, for a day or two, or sometimes even longer, before the close, the breathing seemed to be performed by the flanks—close before the hips—no other movement of the abdomen being perceptible.

This disorder assumed, in some minuter respects, different appearances in different parts of the country. The following brief account of its course in the extreme East, furnishes some one or more symptoms not elsewhere noted.* "Nearly all the cases which came under my observation were preceded by a great degree of languor, loss of appetite, indisposition to the usual exertion; followed by a hard, dry, and apparently painful cough, the animal, when coughing, bringing the head down to the floor, *turning it usually to the left*, and groaning as if in pain. At this stage there was usually fluent coryza, with more or less sneezing, and accelerated respiration.

"As the disease advanced, the submaxillary glands became swollen, and the nasal discharge more abundant, thick, and yellow, appearing in most cases, as it came from the nostrils in mass, like pure pus. But there were two conditions, by which the cough was excited or aggravated, that led me to the choice of the remedies which proved most efficient in my hands. In some cases a *paroxysm of coughing* was always brought on *by drinking;* and in others, though the cough was usually excited when beginning to move in the open air, it *invariably came on when descending.* In the case of my own horses (three in number), a paroxysm always came on when the animal began to descend a hill, and continued till the descent was passed. In the former case *Ammonium muriaticum*^{30} acted with promptness and efficiency; and in the latter case *Lycopodium*, of the same attenuation."

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* Dr. Wm. E. Payne. Bath, Me.; Hahnemannian Monthly, 1873.

In those cases which yielded to treatment, or in which, as was true of many, Nature alone, or assisted only by good nursing, overcame the disorder, the symptoms began usually to abate in about a week or ten days. Sometimes, however, the convalescence would be still longer delayed, even in cases which terminated favorably. Some of the first signs of improvement would be a greater animation, less listlessness, the head more raised to its natural position, and returning appetite. Those first attacked were the severest sufferers, as is the case with epidemics among men; and few died except of those first taken. In some places, large cities especially, the pestilence raged with a violence and fatality far beyond all that might be inferred from the foregoing account. The deaths were numerous; and some breathed their last within a very few days from the commencement of the attack. In New York City, sixty horses died daily, on an average, for many days in succession. Many of these were no doubt hard-worked, overdriven, and sometimes poorly fed and sheltered, omnibus, car, and cart horses. But many others, whose wealthy owners spared no pains or expense in housing, feeding, and grooming them when well, and in nursing and "doctoring" them when sick, fell victims to this widespread pestilence; the most fatal ever known to attack horses in this or any other country. Some of these animals were doubtless already affected in their lungs, although such unsoundness had not been suspected. These were quickly reduced very low by the extension of the new disorder from the head to the pulmonary organs, and its complication with the disease previously existing there. And if there is any good to be gathered from this universal evil, it must be found in the assurance that horses who have had the epizootic and recovered uninjured may well be deemed "sound in wind." All others, that is, those unsound, must have perished or remained permanently disabled, unless, indeed, *as happened in not a few cases, both the old and the new disorder were radically cured by homœopathic medication.*

This epidemic reminds one of the severer forms of what in some sections of the country is known as *horse-ail*, or *distemper;* and taking together the history of many cases, it seems to have combined one or more of the chief characteristics of catarrh, influenza, bronchitis, pleuro-pneumonia, and erysipelas. Nor was it free from a suspicion of the typhoid element, according to the views of many veterinarians. For in numerous instances, in New York City particularly, horses that were put to work too soon, before having time to recover from the unsuspectedly profound debility attendant upon this complaint, very quickly relapsed, became much worse than before, and *cold extremities and dropsy* appeared as the immediate forerunners of death. A similar coldness of the legs appeared also in many of the severer cases, even of those that finally recovered. But their recovery was due, under the ordinary treatment rather to stimulants and external applications and friction, and the very best of nursing, than to the specific action of any internally administered medicines. At first, partly from mistaken notions of expediency, and partly from the necessities of business, the owners considered that moderate work, if not conducive to recovery, would at least not retard it. But from hard experience it was soon found that perfect rest was indispensable, until the crisis was past; that continued rest was equally necessary in order to prevent dangerous or fatal relapse, and that protracted rest was also requisite, in addition to secure complete recovery, this last item of rest demanding to be protracted in proportion to the severity of the original attack. In some places and instances, the animals were indeed "worked right along," although less arduously, and they appeared to recover equally well. But these cases were marked by two characteristics which notably distinguished them from those above mentioned, to whom premature exertion proved so destructive: they were less powerfully affected by the primary disorder, and so were less reduced in strength; and the disease itself had not extended from the head along the course of the respiratory organs, and the lungs were not involved. When the lungs or even the bronchia are affected, it is well known that every extra exertion, whether of drawing or of trotting, aggravates the cough, increases the pulmonary congestion, and renders convalescence difficult, or even impossible. We conclude our rather discursive account of this epizootic with a brief summary of its principal and successive

Symptoms.—Short, dry cough; nasal catarrh; drooping of the head; extreme listlessness; *swelling of throat;* cough catarrhal, or wheezing; loss of appetite; shortness of breath; respiration slow, labored, and abdominal; coldness of legs, and extreme weakness of the vital forces.

The following elaborate account of the epizootic as it appeared in Central New York, prepared by an able physician and close observer,* will present many particular features not noticed in our preceding account: "This is an inflammatory disease which, so far as my knowledge extends, invades the Schneiderian or pituitary membrane of the nasal fossæ and their cavities, the mucous membrane of the larynx and trachea, and of the bronchia. The number and intensity of the symptoms keep pace with the extension and progress of the lesion; and we find many degrees of the same malady, from a mild congestion of the membranes involved, up to an active inflammation with solution of the continuity of the tissues. It is an ACUTE EQUINE CORYZA; mismanagement and exposure frequently bring complications and extensions of the lesion, and we frequently find capillary bronchitis and pneumonia supervening. Instances are recorded of pulmonary or hepatic vomica, and of abscesses in the hoofs. Another occasional complication is paralysis of the locomotive organs, also rheumatism. The last two conditions are generally, so far as we can account for them, metastatic.

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* T. Dwight Stowe, M.D.

"The discharges vary from thin transparent mucus in small quantities, to thick, white-yellow, greenish-yellow, reddish, and bloody, with often broad, chunky, and irregular yellow or cheese-like masses. The quantity discharged is often enormous, completely plastering the manger and filling the nostrils. At times, the odor is very offensive, though, I believe, rarely so. The sense of smell is, in aggravated cases, blunted, and at times lost altogether. Cough is from the first a prominent symptom, and it is in most cases the first symptom which is noted. It is dry at first, and gradually grows looser, but more decided. The animals frequently shake their heads, lengthen their necks, back or step up, seemingly to avoid pain, before and during a fit of coughing. In light cases the animals eat and drink nearly as usual; but in aggravated cases they refuse food, are disinclined to move, look dejected, grow thin, are often cross. The tongue is hot, coated yellow or white, and is broad and flabby. The pulse varies from 35 to 60 per minute; the respiration is hurried, particularly on even slight exertion. The animal perspires easily, and coughs worse when working. The urine is scanty, frequently passed, and leaves a strong ammoniacal odor. When bronchitis or pneumonia follow, or are complications, the horse frequently stands with his forefeet braced and widely separated; he shows tremor, seems anxious, gets thin, has dyspnœa with all the ordinary physical signs found in the human subject under similar circumstances."

From Dr. Stowe's report* we also glean many particular indications for the remedies.

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* Hahnemannian Monthly, 1873.

177. Treatment.—*Mild cases* need rest only, with a warm, light, and dry stable; the mangers should be thoroughly cleaned, as well as the stall and stable generally; the animal should be blanketed and kept warm; the feed should be wet, so that no dust or must can be inhaled; the patients should be taken out for exercise in good weather, but not led off of a walk, and the blankets may be removed at such times, unless it be in winter and quite cold. *Aggravated cases* require careful homœopathic treatment, and no other.

Of the great variety of remedies called for by the different forms assumed by this disorder in different sections of the country, we can undertake to present only the most important. In one section one class of symptoms would be the more prominent; another and quite different class would assume the pre-eminence in a different section, or in a remote part of the country. Thus it happened that cures were made in some places with remedies not at all used in others. And in any return of this epidemic, the practitioner will endeavor to seize upon the true type of the disorder, and find for it the exact homœopathic simile; and even then he will need to select his remedies with particular reference to the present condition of each individual patient. It is thus that brilliant cures are made in some cases, and the disorder shortened and robbed of its severity and danger in all others.

Aconite.—This remedy may be useful in the first day or two of the more violent attacks. Its chief characteristic in this connection being the *short, dry cough* with which this form of influenza mostly sets in. But on account of the manifest tendency of this disorder to a typhoid condition, as shown by the quickly appearing debility, it is hardly probable that Aconite will exert a salutary influence even for a short time, unless in some rare cases of horses which have been very high fed and little exercised.

Aconite may be indicated more particularly by shivering; refusing water and food; short and hurried respiration; is uneasy; may have much thirst; pulse quick, but not very large; blowing of nostrils, with discharge of thin, transparent mucus; short, dry, harsh cough.

Dose.—Ten drops may be dissolved in one pint of water, and a wine-glassful given once in two or three hours.

This remedy is not indicated here by its own most important symptoms, *hard pulse and high fever*—symptoms which scarcely find place in this epidemic. And even the initial cough, for which Aconite might seem required, will be far better remedied by Belladōnna.

Ammonium carbonicum.—This remedy, in the form of Hartshorn liniment, has been found very efficacious in the ordinary treatment of this epidemic. This is solely due to its homœopathic correspondence to the disease. And even when externally applied it acts as an internally administered homœopathic medicine; for its fumes are constantly inhaled into the system.

Ammonium is indicated by *dry coryza, fluent coryza, discharge of bloody mucus from the nose,* coryza, with stoppage of the nose, worse at night, *inflammation of the throat,* angina, *dry cough, especially at night,* languor, *glandular swellings in the throat.* This remedy will be admirably adapted to the condition of overworked beasts who are seized with this epidemic. For the debility which results from the disease itself, Arsenicum may be more appropriate. For further indications, consult the Materia Medica.

Dose.—Ten drops, once in three, four, or six hours; or as advised for Aconite.

Ammonium muriaticum.—This important remedy corresponds in many symptoms to the Ammo. carbonicum, but is especially indicated by *cough, aggravated always by drinking.* See previous account of experience of Dr. W. E. Payne.

Belladonna.—This medicine is well known as one of the most remarkable for the cure of hooping-cough; and the great resemblance of the primary cough of this epizootic to hooping-cough will naturally suggest Belladonna to the veterinarian. And its apparent homœopathic similarity has been confirmed and proved to be real by much successful experience. Indeed, the resemblance between these two forms of cough is not confined to the sound. Both spring from impressions made upon the nervous system by some subtle miasm conveyed through the medium of the inspired air. Belladonna is also suited to relieve whatever of congestion to the head may be present in the most violent forms of this disorder. And, finally, its powerful action on the throat will render it invaluable in removing inflammation there, and in preventing thus the extension of the primary head affection to the bronchia. Belladonna acts also upon the bronchia themselves, particularly in the line of the present affection—of barking, apparently spasmodic or nervous cough—as already stated. Belladonna may be more particularly indicated by: the animal's laying back its ears; drooping the head; looks languid; eyes dull; has a short, dry *cough, made worse by pressure on the windpipe;* thick, white discharge from the nose. The appearance of the coryza or nasal fluid and the loosening of the cough will show that the sphere of action of this remedy has passed, and we look to see which may be indicated next.

Pulsatilla.—This medicine may dispute the precedence with Arsenicum and Nux vomica; for one or the other, or more of these three remedies will be indicated in the great majority of cases of this disorder. Pulsatilla is called for in such instances as are "quiet, downcast, with great discharge from eyes and nose; but more watery and mild," wanting the acrid quality which suggests Arsenicum. Pulsatilla will also be needed if there is much nasal catarrh, especially with yellowish-green discharge; *aggravation* of fever and other symptoms in the *evening* and fore part of the night; *cough loose* or wheezing, *worse in the morning;* flow of tears; loss of appetite; little thirst.

Arsenicum.—This is one of the oftenest indicated remedies in this complaint, and one whose use was attended with the most happy results. Its symptomatic indications are apparently very similar to those of Pulsatilla, and yet quite different. The nasal flux is more of the nature of a *coryza,* more fluent, *watery,* and even *acrid.* There is great debility from the beginning, with acrid, then corroding discharges. The *cough* is less catarrhal, more *dry,* as in the early stage of the complaint, and for this reason it mostly requires to come next after Belladonna; the eyes water profusely, and the fever is *worse after midnight; cough dry, worse from cold air* and at night after midnight (which is not the case with Pulsatilla), and *from the least exertion;* mouth dry; *thirst,* but will drink only a little at a time. Arsenicum has also the *shortness of breath, panting, heaving respiration, excessive debility,* general languor, and restlessness, which go to make up the picture of this disease. And in the more advanced stages of the disorder, characterized by *coldness of the legs,* and disposition to *dropsy,* this powerful remedy has rescued valuable animals even when in an apparently hopeless condition.

Arsenicum also is capable of antidoting the tendency to a typhoid state. It is eminently suited to remove from the system the malignant element of the disorder, and to prevent its triumphing over the vital powers. Many other more particular and minute symptoms might be brought forward which belong alike to this epidemic and to Arsenicum; but the great general indications already given will be abundantly sufficient to warrant its employment either by itself or in combination (alternation) with some other remedy.

Dose.—Dissolve eight drops in a pint of water; give a wineglassful once in three or four hours; Arsenicum has been very often alternated with Nux vomica in this disorder, and with apparent good effect.

Nux vomica.—This remedy has been employed in numberless cases in alternation with Arsenicum, with the greatest success. A dose of

Arsenicum, four drops, would be given early in the morning, and again in the middle of the forenoon, and a similar dose of Nux vomica in the middle of the afternoon and at bedtime. Many veterinarians, however, preferred to give *these two remedies* directly *in alternation,* three or four hours apart.

Nux will be required in those cases in which cramp or colic suddenly appears, indicating an extension of the mucous inflammation to the bowels. Here, also, Bryonia may be needed. Some post-mortem examinations have shown evidence of enteritis, the bowel having been sphacelated. This will be prevented by these remedies.

Nux vomica is particularly indicated by indisposition to move; *hanging down of the head;* by *copious discharge from both nostrils;* coryza, fluent by day, dry at night; *sanguineous nasal mucus; frequent, dry, fatiguing,* or continuous *cough; cough with expulsion of wind from the bowels.* This latter is a remarkable characteristic indication of Nux vomica in the cough of horses; *every time the animal coughs, air is violently forced out from the rectum. Cough always on being made to trot;* this is another most decisive indication; while walking, as in harness, the horse does not cough; but *if made to trot, he coughs with every step,* sometimes with expulsion of flatus from the bowel. Great listlessness (*indifference*), languor, and *debility, like paralysis, drooping of the head.* Trembling, hesitation, and weakness in the legs. *Coldness of the legs. Great inclination to lie down.* All these symptoms of paralytic debility, belonging to the cerebro-spinal nervous system, correspond to the prostrating indications of Arsenicum already referred to belonging to the sympathetic nervous system; hence these two medicines have been found to work together admirably, rendering the attacks of this disease much lighter when given from the first, and procuring a much more speedy recovery in all cases. All that was said in the introduction to the present work with reference to the superior advantages of homœopathic treatment in *shortening sickness* and in *saving life,* finds its proof and confirmation most abundantly in the history of the treatment by these remedies of this destructive epidemic.

Bryonia.—This remedy finds its sphere of use after the cough has established itself, and become somewhat loose, and remains in spite of the medicines already employed. Its great power of *promoting absorption* here comes into play with immense advantage. And the heaving, difficult respiration, too painful for comfort, and too short for safety, is soon improved by Bryonia, which removes at once the soreness and painfulness which occasions the distress, and *the accumulated mucus which blocks up the bronchia.* Numerous particular indications for this remedy may be found by referring to the Materia Medica; but our object here, merely to point out the relative place of Bryonia in the treatment of this epidemic, is already accomplished. It is eminently characterized by *cough worse in the open air and on motion;* even the *slightest movement* manifestly *aggravates the condition* and *gives pain.* And the disappearance of these symptomatic indications will lead the veterinarian to look for some other remedy for the remaining difficulties.

Sulphur.—This remedy will be found indispensable for the cure of the nasal catarrh, which shows a disposition to remain and become chronic. For this purpose it may very well succeed Bryonia, being equally capable of removing the lingering cough, or bronchial catarrh. But it is not advisable to give this remedy in frequently repeated doses. *Six drops every morning will do good;* larger doses, or more frequently repeated, will do harm. This remedy excites also a useful influence in antidoting a disposition to relapse, and to take cold on first going out after being shut up in the stable in winter. *Sulphur* is invaluable also in removing any tendency to other forms of disease which might threaten to succeed this epidemic. By reference to the Materia Medica many indications corresponding to particular cases may be found. But *great debility* with *disposition to perspire,* as a consequence of the previous sickness, may be mentioned here as conditions which Sulphur is admirably adapted to improve.

Rhus tox.—This remedy will be needed to assist in removing a *stiffness of the joints and limbs* consequent upon the epidemic, also *swelling of the legs.* It will be so much the more strongly indicated if the lameness and difficulty of movement seem to disappear, in a measure, upon exertion. Ten drops of the dilution may be given three times a day with advantage.

Phosphorus.—This remedy was found suited to the form of the epizootic as it appeared in Philadelphia. Dr. Hering treated his own horses and those of his friends with this remedy and *Bryonia,* without any others, and cured all his cases. Phosphorus, as a leading remedy after the prodromic symptoms, is almost the first to be thought of. The nasal discharge is thick, greenish, heavy, copious, and at times very offensive; the cough is hoarse, dry, hollow, racking, and painful, though at times the animal shows no pain; pressure on the windpipe, dust, the odor from strong urine, cold air, and exercise aggravate the cough; the expectoration is tough, yellow, green, rusty, and more abundant in the morning; the animal loses flesh fast; especially necessary in this complaint when the lungs become involved. Many other special characteristics of Phosphorus, which is alike *adapted to dry and to loose or hoarse coughs*, may be found in the Materia Medica.

Tartar emetic has been found useful in some cases. It is peculiarly adapted to the loose catarrhal cough, and may be indicated in conditions to which Bryonia seems suited but does not do all.

Dose.—Ten drops every four hours.

Mercurius was successfully employed by some physicians in treating their horses. It was given after Aconite.

Euphrasia was exactly adapted to the form of this disease in some sections. With this remedy, followed by Belladonna, some doctors cured their cases very happily. Symptoms: Profuse smarting lachrymation and photophobia; a dread of light; frequently blows the nose (snorts); loose cough, with white and thin expectoration.

Allium cepa proved of use in some instances. The following are the principal indications and characteristic symptoms: A profuse, thin, rather excoriating discharge of tears from the eyes, with redness of the same; constant winking; rubbing the eyes; dread of light; uneasiness. Profuse discharge of thin and milky mucus from the nose; cough, with blowing out of much nasal mucus; better in a well-ventilated room; thirst, with mitigation of symptoms from drinking.

Lycopodium.—Found by Dr. Payne (see previous portion of this section) to be indispensable in this epidemic *when the cough was always brought on when going down hill.* Coughs with this characteristic symptom have also been cured in horses with Nux vomica.

Kali bichromicum.—Blows from the nostrils long strings of thick white or yellow mucus; coughs up the same; right nostril more affected than the left; suited to sorrels and white horses.—*Dr. Stowe.*

Many other medicines might be enumerated here, some of which have been employed, others of which might be needed in case this disorder return, *as it surely will.* But it is believed that those already set down will prove sufficient in the future as they have in the past, and in case others should be needed they may be found by a careful study of the remedies recommended for nasal catarrh, for influenza, for pneumonia, and for cough. And these sections, the latter especially, may be studied for the sake of gathering more particular indications of the remedies above mentioned with general indications principally.

Dose.—The selected remedy should be prepared in the manner indicated on page 34, and given once in three hours in the earlier stages of the disease. When the symptoms become less violent, a dose once in four hours will be often enough. When marked improvement appears, the medicine may be given night and morning.

When the first onset of this disease is very violent it may be necessary to give the appropriate remedy every hour, for a few hours, and then once in two hours as the symptoms become *less* urgent.

Diet.—Hay is grateful to the animals affected with this distemper, but should be denied to those very sick, and allowed to others only in moderate quantities. *Bran-mashes warm* and the drinking-water warm will be best suited to severe cases, in cold weather especially. Boiled turnips, boiled potatoes, and raw apples have been found useful, and to keep up the animal's strength in the later stages, corn-meal, over which scalding hot water has been poured, may be given in small portions, repeated every few hours, as the case may require. The horses should have warm blankets and warm bedding in cold weather; the stable should be well ventilated, and when their condition will admit of it, they should be taken out doors and walked about a little, but not so much as to fatigue or distress them. If the legs become cold, they should be carefully and thoroughly rubbed every three hours, and in cold weather wrapped up in warm cloths.

It has been customary to fumigate the stables with burning tar. This may serve in some instances to relieve the dry cough, or rather to diminish the bronchial irritability, but these advantages may be better secured by simply giving the appropriate homœopathic medicines. The same may be said with reference to rubbing the throat with liniments; the principal of these, as well as the best, are composed of hartshorn,—liquid *Carbonate of ammonia,*—and there is little doubt that if the old school veterinarians would confine their treatment of this and some other forms of head and throat distemper to the external and internal use of this valuable and truly homœopathic remedy to such cases, they would be vastly more successful. But in the homœopathic veterinary practice this remedy should be employed by itself when believed to be indicated, as others, specially called for, by themselves or in alternation. The homœopathic treatment is successful just in proportion as it is strictly adhered to and faithfully carried out, and in the treatment of this epidemic, which bears some relation to the rinderpest and American (Texas) cattle plague, little more need be asked for in the way of success than has already been attained.

178. Rinderpest—Cattle Plague of Great Britain.—The Rinderpest, or, as this German name is literally translated, the Cattle Plague, belongs to the class of zymotic diseases, those in which, according to the former pathology, the blood was believed to undergo a ferment. It is equally contagious, malignant, and fatal. It is a blood-disease; but the cold, sometimes warm; the palate is dry; the eyes shining. Respiration is slightly quickened; there may be cough, with great difficulty of breathing, the animal making more noise on *expiration* than in pleuro-pneumonia. The vulva assumes a reddish tinge, of which the color deepens as the disease advances. The mouth shows a faint red or purple line on the under gums along the roots.

In the second or congestive stage the *pulse* rises (from the healthy standard of forty-five to sixty, in the field and stable respectively) to eighty, ninety, or even one hundred and ten beats in a minute. *Respiration* becomes from forty to ninety-six, instead of eighteen or twenty per minute, as in health. Temperature lowered and vitality depressed, characterize this disease throughout its course. Exudations from the eyes, nose, mouth, and vulva form with rapidity, consisting of a glairy, ropy mucus. An abundant yellow or bloody, stringy discharge comes from the nostrils, which gradually becomes white and fetid, and a tough, viscid slime flows from the corners of the mouth. The anus is frequently highly congested; the *urine* becomes *loaded* with blood, and is passed with considerable pain and difficulty.

With convalescence the animal improves in appearance; begins to take food and chew the cud. An itching, scabby eruption sometimes appears on the skin of the nape or sides of the neck, or on the back. But when the disorder takes an unfavorable turn, and the period of congestion is not relieved by favorable indications, then follow the symptoms which result in death. Diarrhœa, often dysenteric in its character, or thin, watery, and offensive in the highest degree, sets in, exhaustion, accompanied by intense restlessness follows, and death takes place in consequence of the *failure of the vital forces, which have been overwhelmed in the putrefactive dissolution of the fluids and solids of the body.* Sometimes where the symptoms seem to have been improving, the animal suddenly becomes more dull, the head drops, the eyes look heavier, the conjunctivæ are almost livid, the teeth are ground; the animal butts at everything within its reach, oftentimes becoming furious, and suddenly dies.

With the following description of the course of the disease in a cow that had been inoculated by inserting in both sides of the neck between the shoulders woollen threads saturated with the secretions from the eyes of a yearling calf, we close our account of this malignant disorder: "On the sixth day, short, hacking cough. On the seventh day, loss of vivacity, drooping head and hanging ears; rumination ceased; shaking of the head; gnashing of teeth; hair bristling, and skin lying in folds On the right side auscultation showed blowing mur-

murs; and percussion, dulness. On the same evening eyes and nose began to run; milk diminished, and had a strong, salty taste; *respiration and pulsation equal to sixty per minute.* On the eighth day these rose to eighty; secretions increased; ears and horns alternately hot and cold; mouth hot; chilliness over the whole body; neither eat nor drank. On the ninth day respiration one hundred, with sighing; left side of bowels tympanitic, but normal at six P.M., when the pulse was eighty-eight; diarrhœa mixed with blood; aphthous appearance of the vulva. On the tenth day, pulse one hundred and eight; respiration fifty and sighing; bloody diarrhœa; colliquative flux from nose and eyes; body cold, and death at six P.M."*

The *morbid anatomy* of this and many other similar cases is well described in the report already cited, and made clear to the eye by numerous colored lithographs.

Treatment.—Says Professor Gamgee:† "Little can be done in the way of treatment beyond, &c., &c.; *but all treatment appears futile.*" Such is the honest confession of the old school, or allopathic veterinary practice. It remains to show with what success homœopathy has struggled with this deadly plague. But before proceeding with this, it is proper to refer to a method from which, at one time, great results were expected—*inoculation.* The plan is the same as inoculation with small-pox in men, which was deemed a great discovery, till superseded by Dr. Jenner's safer and equally certain method of vaccination, or inoculation with cow-pox matter. Inoculation for the cattle plague failed for the same reason that the inoculation with small-pox matter failed, that many cases proved fatal. And this method of attempting to arrest the progress of the rinderpest proved less successful just in proportion to the greater malignity and fatality of this disorder.

179. Treatment.—The remedies which were found most effectual in treating the cattle plague of Great Britain are reported by James Moore, M.R.C.V.S., and A. C. Pope, M.D., the former a well-known veterinary surgeon, and the latter an eminent physician, who took great interest in practically studying the treatment for the sake of testing the power of homœopathic remedies to cope with this malignant disease.

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* "If the disorder continued beyond the seventh or ninth day, if the breath continued hot and the body cold, and *the discharge from the eyes and nose increased,* the animal appearing in pain, death was usually near."

Delabere Blaine, "Outlines of the Veterinary Art," London, 1841, p. 294, from Dr. Lagard's Account of the Murrain in England in 1757.

† "Dairy Stock, its Selection, Diseases, and Produce, &c." By Prof. John Gamgee: Edinburgh, 1861, p. 142; speaking of the Rinderpest of Europe.

And from the reports of these gentlemen we glean some hints as to the particular indications of the remedies employed.*

Arsenicum.—This remedy was largely given as a prophylactic; but although it was at first believed to have exerted a favorable influence in some cases, and possibly to have warded off the disease in a few instances, its positive value to prevent the cattle plague generally is more than doubtful. In Mr. Moore's hands Arsenicum proved successful in one case, in which the animal had running from the eyes and mouth, and loss of appetite and milk. In another case where the cow was enormously emphysematous all over, except the ears and tail, so much so that the pulse could not be felt; when the respiration was 80 per minute; great difficulty of breathing; the paunch much distended; the nose poked out, and the fæces slimy, Mr. Moore saw little hope of recovery; but prescribed a teaspoonful of *Liquor arsenicalis* and the same dose of *Liquor ammoniæ*, every two hours in alternation, with perfect recovery. Dr. Pope found Arsenicum chiefly useful in meeting the prostration about the fifth or sixth day.

Dose.—Ten drops thoroughly mixed in a pint of water; two tablespoonfuls to be given every three hours.

Belladonna.—According to Dr. Pope, Belladonna more than any other remedy corresponds to the prominent features of the English cattle plague. The difficult breathing, the congested mouth and throat, the engorged conjunctiva, the general congestion which pervades the mucous surfaces, with desquamation following, all point to this as the remedy *par excellence.* It has been, he says, "more valuable than any other we have used." The first, second, and third dilutions were tried in the early cases, but they were by no means so satisfactory in their action as the pure tincture, which was given in from four to ten-drop doses every two, three, or four hours.

Mr. Moore reports a case in which he gave Belladonna and Bryonia with success; the following were the symptoms: Pulse 72; respiration 50; crepitation in left lung; the membranes of the eye and nose reddened; the nasal wings swollen; the muzzle spotted with purple-colored spots; running from nose and eyes; the vagina reddened; the appetite and lacteal secretion diminished; cudding suspended. Another case, a cow suffering from well-marked symptoms of the plague, such as discharge from the eyes and nostrils; redness of the vagina in stripes; pulse 76; respiration 64; crepitation in left lung; little appetite; rumination suspended; diminished secretion of milk—recovered under

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* Monthly Homœopathic Review, March and February, 1866.

Belladonna and *Phosphorus.* A cure was effected with these same remedies of another cow presenting the following symptoms: Pulse 72; respiration 60; crepitation in right lung; violent purging of thin, offensive fluid; eyes sunken, and discharging muco-pus; nasal membrane very red; discharge from nostrils; short cough; head protruded; milk gone; cudding suspended; vagina red and mattery.

Phosphorus was equally valuable with Belladonna, and given in alternation with it, in cases where the lungs became decidedly involved, and yet there was not the profound prostration which required Arsenicum. Dr. Moore* reports a couple of cases cured with Phosphorus and Belladonna. These cases have been cited under the head of *Belladonna.* The cattle plague in Holland was successfully encountered by *Phosphorus* in the sixth dilution. For the characteristic symptoms and indications for Phosphorus, in addition to the crepitation just mentioned, reference should be made to this medicine under the titles of "Treatment of Pleuropneumonia," "Pneumonia," "Equine Epizootic of 1872," and "Cough." It should be given in ten-drop doses well mixed in a little water.

Rhus tox.—The chief indication for this remedy, according to Dr. Pope, has been found in the muscular twitchings which characterize this disease in some of its stages.

Dose.—Same as for Arsenicum.

Mercurius has been found useful when the mouth has been long congested, and the patches of desquamation are general.

Dose.—As advised for Arsenicum.

Ammonium causticum, first decimal, is of service when there is much abdominal distension, with heavy breathing and painful moaning.

Dose.—Six to ten drops in a little water, every hour, till relieved.

Terebinth (Turpentine), first decimal, has been of signal service in checking hæmaturia, a symptom which did not yield to Cantharis.

Dose.—As above indicated for Ammon. caust.

Phosphoric acid, first decimal, *Mercurius solubilis,* and Arsenic have appeared to control the diarrhœa more than any other remedies, according to Dr. Pope; "but they have not proved altogether satisfactory. In a future case I should be disposed to try Muriatic acid or China. It has been a more difficult symptom to meet than any other." This diarrhœa must always be an incurable symptom in the last stages of the disorder; then it simply results from the final decomposition of the tissues and dissolution of vital solids and fluids alike.

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* Monthly Homœopathic Review, March, 1866, p. 154.

In addition to the above-mentioned remedies, others, called *antiseptics*, such as *Phenic acid* (the original name for Carbolic acid), *Condy's Fluid* (a solution of Permanganate of Potassa), and Arsenious acid, in the form of *Liquor arsenicalis* (Fowler's Solution), have been employed with great success. "Many of the veterinary surgeons in Holland believed that the disease was of parasitic origin, and on that ground they tried the *Phenic* (Carbolic) *acid*, and with considerable success."* Later experience, especially in the United States, demonstrates the power of these remedies to destroy the virus of the cattle plague, externally and internally; but the *Phenic* (Carbolic) acid is by far the most efficacious of all. And the use of this internally in this class of infectious disorders renders it for them an abortive or preventive treatment.

For further views of the antiseptic treatment of this malignant and infectious disorder, see the "Treatment of the American or Texas Cattle Plague," in the following section.

180. "Texas Cattle Disease"—"Spanish Fever"—The American Rinderpest.—In June, 1868, a cattle disease appeared at Cairo, Illinois, which was quickly recognized as that called "Spanish Fever" in the Gulf States. This scourge previous to the late war had repeatedly crossed the Texan border, and swept off immense numbers of cattle in Kansas and Missouri. From Cairo it now spread through the interior of Illinois and Indiana, and made itself known along all the great lines of communication between the West and New York City. It was brought by cattle driven from Texas, and hence became known as the "Texas Cattle Disease." But the infection conveyed by these animals to the "native" cattle of the States through which they passed was vastly more fatal to the latter than to the former. Indeed, it was affirmed at first, that the wild cattle from Texas, though imparting the disease to others, themselves constantly escaped; but this was soon disproved. From the very able, elaborate, and complete Report of the New York State Agricultural Society, 1867, Part II, we have derived the material of the following statement of the symptoms and course of this disease, often employing in whole paragraphs, and descriptions of individual cases, the very words of the writer. And to this Report, illustrated as it is with numerous colored plates, the reader is referred for an exhaustive account of the natural history and pathology of the Texas cattle plague.

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* Monthly Homœopathic Review, Dec., 1865, p. 746.

Origin.—The causes which originally developed the disease in question among the savage cattle owned by thousands in the wilds of Texas, it is not within our province to discuss. Suffice it to say, in numberless instances, steers selected at random from droves of Texan cattle which were to all external appearance in perfect health, would present on being slaughtered "the unmistakable scars which this disease invariably leaves upon the coats of the stomach." And the hardships and privations of the long journeys which these poor animals were compelled to make—unable to sleep and deprived of all food and even water for many days in succession—sufficed to develop the seeds of this disorder already present in their systems into a state of virulence which destroyed whole herds, and in some instances completely exterminated the domestic cattle in the regions through which these herds were transported.

Nor was the manner in which the infection was communicated to what in contradistinction from the Texan droves were called "native" cattle, the least remarkable circumstance in the history of this American rinderpest. Native animals mingling freely with these Texan strangers would of course receive from them personally whatever of infection they had to impart. But in the great majority of instances in which this plague was communicated, there had been no such personal intercourse. But wherever the foreign cattle had traversed the roads or been pastured, or even herded over night, their droppings retained so much and so active a form of the virus, that all native animals that occupied the same ground, even weeks or months after, rapidly sickened, and the greater number of them died.

The poison was apparently communicated to them through being absorbed by openings in the cleft. For native cattle have been known to take this disease from being only driven over the same roads which had been traversed recently by those from Texas. In other cases there is no doubt that the disease is propagated through the excrements (droppings) coming in contact with the food, grass, and so being taken into the stomach of the animal. Hence the stomach, bowels, and kidneys are seen to become the primary seats of the disease. The rains which might be supposed capable of washing away and totally dissipating this poison, but served to render it more quickly fatal. Only the hard frosts which appeared late in autumn could effectually destroy it. Until then the very grass seemed alive with this death-dealing element.

Symptoms.—The first indication of the presence of this disease consisted in increased heat of the body as shown by the thermometer.

The natural heat is about 100° Fahrenheit; the temperature in those first beginning to be affected would be 102° or 103°, while in the more advanced stages of the disease, it rose as high as 106° or 107°. And even the internal organs, immediately after the beast was slaughtered, would carry the mercury up to 106°. This remarkable and uniform augmentation of temperature became an invaluable prognostic of the onset of the disease; since it could be found three or even five days before the appearance of the more obvious external symptoms. And this interval admitted of the timely administration of medicines calculated to antidote the poison in the system even before it had fully developed itself.

The period of *incubation* was very short; in some instances native cattle have died within four or five days of being exposed to the infection. But the rapidity of the course of this disorder may depend somewhat upon the amount and intensity of the poison absorbed into the system. In other instances the native cattle began to be sick about two weeks after some Texas droves had remained over night in their vicinity.

In the beginning of the disease there is an uncertainty of step and trembling, showing an inability to remain firmly standing on the feet, and with this a disinclination to move; the head drooping. The appetite does not seem to be impaired, nor is there any unusual thirst; the skin is alternately hot and cold; the secretion of milk is diminished; and about the fourth or fifth day a marked change in the appearance of the animal takes place. The abdominal walls are shrunken, the animals becoming lean, breathing quick and short, and do not have strength enough to raise themselves, and when raised cannot remain in that position for any length of time. The secretion of milk decreases daily, the secretion itself continuing until death, and is of a thick, creamy character. The secretion of urine is also changed, the animal having a constant desire to urinate, succeeding, however, in ejecting only a small quantity of bloody urine. The fæces are discharged with great effort, and are dry and hard. It is not easy to separate into any distinct stages the course of a disorder which so rapidly reaches its conclusion; but we give successive pictures.

In the more advanced progress of the disease, the animals stand apart from their fellows; present a listless appearance; the head hanging low down; the base of the horns hot; the ears drooping; the eyes dull and staring; the spine, or back, peculiarly arched; the hind feet being drawn under the body and placed in a bracing attitude; a tremulous creeping over the flank muscles, with frequent efforts at voiding fæces, which are generally small, hard, and rounded, and covered with bloody mucus. In the further stages of the disease, there may be diarrhœa, and *frequent passing of urine, which has a dark and bloody appearance.* A fully developed case presented the following symptoms: An arched or roached back; head carried low down; ears drooping; eyes staring, with a dull, glassy appearance; gait tremulous, and staggering in the hind quarters; the fæces hard and streaked with blood; urine copious, and bloody in appearance; pulse about eighty; respiration, forty in a minute; the temperature of the rectum, as shown by the thermometer, was 107° Fahrenheit. The debility becomes so great, with refusal to eat, that the animal lies down, and is unable to rise; death closes the scene.

The rapidity with which, after its period of incubation, this disease advances may be judged from the following statement of the condition of a steer sick only thirty-two hours: Temperature of rectum, 107¾° Fahr.; respiration, 36; pulse, 76; from nostrils, profuse mucous discharge, streaked with blood; anus appears dry and contracted; fæces almost natural; urine bloody; the animal balances himself by strongly twisting his head and neck to the left. The condition of an ox in the last stage of the disease, and unable to rise, is thus briefly stated: Head drooping near the ground; eyes staring, dull; horns cold; body hot; breathing rapid; pulse feeble, unable to count it; coat rough, flies adherent; temperature of rectum, 106½° Fahr. In another case, the temperature of the blood flowing from the aorta as it was slaughtered was 107° Fahr. The following description of another sick animal, also far advanced, will complete our picture, from which the reader will have no difficulty in recognizing the disorder, when the first case presents itself before him: A four-year-old steer, standing with head low down; saliva running from the mouth; ears drooping; eyes staring, glassy, and dull; coat rough; arched spine; hind feet drawn under the body; voiding bloody urine; fæces fluid and dark; gait staggering; trembling (*subsultus*) of a portion of the flank muscles; great debility; unable to walk any distance without falling down; rising with great difficulty; temperature of rectum, 105½° Fahr.

Upon milch cows the general effect of this disorder is the same as upon other stock; in most cases the flow of milk is instantly stopped. In two cases, which came under the observation of Mr. Atkins, a leading agriculturist of Illinois, of cows with calf, the disease culminated in abortion, which was followed by immediate convalescence of both animals. Milch cows seem to be very susceptible to the disease. Calves are not so. Not a single instance, says Mr. Atkins, have I known of a calf dying of the disease.

When dead animals are examined, even three or four hours after death has taken place naturally from this disorder, it is found that putrefactive decomposition has already begun. And in some instances it was found in the dissection which instantly followed the slaughter of condemned animals, that putrescent disorganization was already in progress in the kidneys, spleen, and liver, and the capillary bloodvessels of these organs and the surrounding tissues were already filled with gases resulting from general decomposition.* From the very nature of the malignant virus, which thus begins to putrefy the viscera even before life is extinct, it is evident that the disease itself—the obvious results of this virus—must run a very rapid course. In some recorded cases death occurred in four days from the first appearance of sickness; in one in particular, the sickness set in ten days after exposure, and the animal died in a few hours. Thus it has been considered by some *a fever of but one paroxysm.* This last access of fever, which marks the sudden close of the animal's life, is ushered in by a chill. And from this and many other observed analogies, as well as from its far Southern origin, this disorder has been regarded as corresponding to the yellow fever in man. Indeed it is by Dr. Stites affirmed that the Texas cattle disease may properly be termed *the yellow fever in cattle.* But it is doubtful if the yellow fever in man possesses a virus so malignant, infectious, and contagious as this cattle plague does. This latter disease may be communicated to horses; and an account is given by Mr. Hill, of Tolono, Illinois, of the prevalence of this Texas epizootic among the horses of the same district in which the cattle had been swept away before the horses began to die. In some cases, the disease has been found complicated with pleuro-pneumonia. What is quite singular, calves appear to remain exempt from this disease.

Pathology.—The *liver* presents, upon examination after death, an increase in size and weight, and shows sometimes a "waxy" condition, especially in animals that had suffered long with the disease. Sometimes there appeared a similarity to that peculiar "dry" condition which occurs in long-protracted fatal cases of yellow fever in man. The *spleen* also is very much enlarged, no doubt from the necessity laid upon it to become the temporary "waste-gate to the portal and gastric circulation," in consequence of the engorgements and obstructions in the circulation of the liver. The *kidneys* would likewise be enlarged, dark-colored, and engorged throughout with dark blood. Their functional action was kept up almost to the last in the desperate effort of Nature to free herself from this disorder; hence the dark bloody urine which characterizes this disease, and with many people gives its distinguishing name of "black water." The kidneys, of course, became themselves destructively affected by the poison they attempted to eliminate from the blood, and presented on dissection evidences of that "marvellous rapidity of disorganization and putrefaction" to which we have already referred as attacking the abdominal viscera even before death.

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* The following statement of the condition of the internal organs of an animal examined immediately after death shows that he died of *putrid blood-poison:* "Liver enlarged, softened; weight, 16½ pounds; gall very thick, dark; bladder, one quart of urine, dark, bloody; kidneys perfectly disorganized; rectum gangrenous; spleen an enlarged, engorged, pulpy mass."

181. Treatment.—The American rinderpest bears a striking resemblance to that already described as prevalent in Europe at various periods for many centuries, and it especially corresponds to the form so lately raging in Great Britain. The more common homœopathic preparations which then proved so successful, as well in Holland as in England, would no doubt be applicable to such a variety of this disorder as appeared in the United States. But there is another remedy, *Carbolic acid*, which is no less truly homœopathic to this complaint, and which, both as a preventive and as a remedial measure, leaves little to be desired. This most powerful antiseptic given in large doses destroys all the normal vital germs in the blood, and has been known thus to produce death in three minutes.* In smaller doses, Carbolic acid has the wonderful faculty of attacking and destroying all the abnormal or diseased living germs in the blood, and thus it acts internally as an antiseptic in the same manner that it does externally. Hence this drug becomes a homœopathic agent seemingly prepared for this very class of infectious virulent disorders, which yield with so much difficulty to any other medicines, since, in small doses, it saves life (by destroying abnormal or infectious germs) in exactly the same manner that in larger doses it destroys life by destroying all the vital germs.

The treatment of the cattle plague in America may be divided into two stages: one *preventive* or prophylactic, the other *curative*. As the New York State Commissioners observe in the conclusion of their report: "With reasonable care on the part of stock-owners in keeping themselves supplied with carbolic acid in some one or more of its forms, and using it freely on their premises, there appears to be a perfect immunity from diseases that have, hitherto, carried inevitable destruction wherever they appeared.

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* Carbolic acid "acts by attacking vitality in some mysterious way. The powerful action which this drug exerts on the phenomena of life is the most remarkable property which it possesses. In the presence of carbolic acid the development of embryotic life is impossible, and before its powerful influence all minute forms of animal life must inevitably perish."—Wm. Crookes, F.R.S., 'On the Application of Disinfectants in Arresting the Spread of the Cattle Plague." London: 1867.

"Further than this, the observations of the Commission warrant the belief that this same agent possesses curative properties of the greatest value when applied to 'foot-rot' in sheep.

"From the fact that carbolic acid acts specifically upon all germs or seeds of disease that are propagated in a manner similar to the spores or fungous parasites of the Texan disease, it is not too much to hope that it may be used successfully in the treatment of many diseases in animals heretofore regarded as incurable, especially the glanders in horses; inasmuch as the recent researches of the world-renowned Hallier, of Jena, have brought to light in the nasal discharges and circulating blood of glandered horses the *Coniothecium equinum*, a microscopic parasite of the same genus as the *Coniothecium stilesianum*, which is the active agent in the Texas cattle disease."*

"*Disinfection and Disinfectants.*—Carbolic acid is an absolute and perfect disinfectant. It not only destroys the odor, but kills the virus of the disease. We advise all farmers and drovers who have reason to suspect that their cattle have been exposed to the infection, to sprinkle the substance known as 'heavy oil,' which contains about ten per cent. of carbolic acid, abundantly about the yards where they are confined, and to put some carbolic acid into the water they drink in the proportion of one part of pure acid, with thrice its own weight of sal soda, to one thousand parts of pure water."

For medical treatment the following method has proved very successful, as may be judged from a single statement. Out of a herd of thirty head, eighteen were diseased; nine of these died before any treatment was instituted, the other nine were saved in the following manner: "The sick animals were placed in a small inclosure by themselves. Pure *carbolic acid* was placed in a large open-mouthed bottle, dissolved in water. This was held to the nostrils, and given by inhalation at short and repeated intervals. The heavy oil of coal-tar, containing seventy per cent. of carbolic acid, was liberally sprinkled upon the yard where they were kept, thus presenting the fumes of the carbolic acid constantly. The feeding was low diet, plenty of water, salt, and outdoor air."†

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* Annual Report of New York State Agricultural Society, 1867, Part II, p. 974. By reference to the section on "Glanders," it will be seen that the anticipation above given has been confirmed.

† New York State Agricultural Society Report, 1867, Part II, p. 1025.

Carbolic acid seems to exert the same direct specific influence in destroying the noxious virulent germs of the infection of glanders and the cattle plague that camphor does in antidoting strychnine, or belladonna in antidoting poisonous doses of opium. Carbolic acid may, indeed, have been first introduced into medical practice by the allopaths, but it is none the less strictly homœopathic in its remedial action, and is very properly given by homœopaths, even in considerable doses. But the method of administering this drug *by inhalation*, which old school veterinarians have found most efficacious, is the very one for which Hahnemann, the founder of homœopathy, has been subjected to such unsparing ridicule.

SECTION II.

CATARRH OR SIMPLE COLD, HOOSE, MURRAIN, CATARRHAL FEVER, SIMPLE AND MALIGNANT, EPIDEMIC CATARRH.

Influenza.—The hoose (catarrh), simple or epidemic, and the malignant epidemic distemper or murrain of cattle, the common cold and epidemic disease (of very rare occurrence) amongst sheep, the catarrh of pigs, and that as well as the catarrhal and malignant disease of horses, and, lastly, the distemper of dogs, have been classed under one general head, because they are so intimately connected as frequently to constitute different stages of the same disease; although it should be added, respecting the distemper of dogs, that it is not necessarily a catarrhal disorder (properly so called), whereas all the others are.

182. Hoose, Epidemic Catarrh, and Murrain.—*Symptoms:* Hoose consists of symptoms very analogous to those already described under the head of nasal discharge and strangullion, with the distinction that the inflammation of hoose is always accompanied with cough, and that it extends farther down the throat and air-tubes, affecting the glands of the mouth and throat generally. On the first development of the cough, there is often no appearance of constitutional disturbance, the appetite and rumination are unaffected, there is no heaving of the flanks, and the muzzle is naturally moist; but unless the incipient stage of hoose be obviated by appropriate regimen and treatment, it will soon assume a more serious aspect; the muzzle will become dry, the pulse accelerated and full, or small and hard, the root of the horn will manifest increased development of heat, the appetite will be irregular and diminished, rumination will be slow, listless, or suspended; the coat will assume the characteristic roughness of fever. Or, at other times, these active symptoms will subside, and the disease will degenerate into chronic cough; the flesh falls away unaccountably, the milk is diminished, and, finally, fails; the lungs become permanently diseased, and confirmed and hopeless consumption ensues. Or, on the other hand, during the prevalence of catarrh or influenza, as an epidemy, the neglected hoose will almost invariably degenerate into

Epidemic Catarrh, which is attended with obstinate and intractable costiveness in its first stage, followed by equally invincible diarrhœa, the disease making fearful and rapid strides in sapping the constitution and wasting away the flesh; the evacuations become *putrid*, black, and in every respect indicate the rapid approach of a gangrenous condition; tumors, accompanied (as also the skin generally is) with a peculiar crepitating sound upon pressure, become developed, about the joints, head, ears, neck, loins, and back. The discharges from the nostrils or mouth becoming excessively fetid, the breath tainted, the skin adhering to the ribs, the coat rough and staring, the gait oscillating and uncertain, with reluctance or inability to move. The epidemic variety of catarrhal affections amongst cattle is virulent and infectious to an inconceivable degree, and becoming incorporated with the complications of other critical diseases becomes fatal in the majority of cases, according to the old method of treatment.

183. The Murrain of cattle is another disease of identical origin and primary character, but of redoubled malignity—more severe generally amongst cattle than horses, and of the most intractable and fatal character. It appears to occur in the double character of an epidemic and endemic disease, which is more or less prevalent at the moulting seasons (the spring and fall) every year, but which, on some occasions, rages with peculiar fatality over particular districts, where, owing to the greater proportion of woodland, evaporation is rendered slow and imperfect: or where, owing to swamps or imperfect drainage, the soil is constantly saturated with moisture. The primary seat of the disease may be traced to the organs of respiration, and the portions of the system immediately connected with them; but it is invariably so complicated as to involve the whole, and all parts, of the system, more or less, in the progress of its development; and it finally assumes a fatal typhoid character. It may either be dependent upon neglected hoose or epidemic catarrh, or may appear from the onset in its idiopathic character.

Symptoms of Murrain amongst Cattle.—The incipient symptoms are very analogous to those already described; but the cough is generally more severe, apparently causing much pain, very commonly unattended with any other manifestation for many days, and generally more continual or frequent than that to which we have before had occasion to allude, and which even becomes still more reiterated and somewhat convulsive; by degrees, the flanks begin to heave, and afterwards become compressed, when the peculiar tenderness is replaced by more or less insensibility of the parts; heat of the mouth (which soon emits more or less dark sanguineous matter) and breath, with coldness of the base of the horns, becomes developed; accelerated or irregular, small and wiry pulse, afterwards becoming, by degrees, more and more feeble; the whole course of the spine, together with the entire surface of the skin, becomes characteristically tender of the touch; matter mingled with blood is discharged from the nostrils, which are often contracted convulsively; incapability of retaining a recumbent position, or even a continually erect position, with few, if any, intervals of recumbency; evacuations always very dark (black); sometimes, however, hard and costive, or at other times quite liquid and peculiarly offensive, and becoming more so; phlegm, and afterwards blood, predominate; the respiration becoming more rapid as the pulse becomes more feeble; cold and very offensive sweat; stench from the mouth and nostrils with the breath; the gait becomes oscillating; there is a peculiar and continual moaning or lowing; the eyes are swollen and watery; there is continual grinding of the teeth, and a peculiar convulsive semi-jactitation of the head; during the course of these symptoms the tumors or blains which identify this disease begin to appear about the body, &c., and as they proceed to suppuration, the putrid odor becomes intolerable, and sometimes, also, the sloughing inordinately profuse; but the rapid progress of these blains, and their abundant discharge, so long as they continue* to be actively developed, are to be looked upon as the harbingers of a cure; all that we have to dread is the retrocession or indolence of the boils.

Causes.—Hoose, and its consequences, may arise from heated, crowded, and unhealthy cowhouses, absence of proper ventilation, from sudden transitions of temperature, from exposure to draughts or currents of air, either within doors or in a half-sheltered yard; from atmospheric influences and the greater susceptibility of the animal in the spring and fall, during the process of changing the coat; continual breeding from the same stock (or family) will render it almost hereditary; anything which serves to deteriorate the energies of the system, may occasion a susceptibility to hoose; calving, when attended with severe labor, excessive loss of blood, or succeeded by inflammatory affections, may be followed by hoose; insufficient and improper food, and the change of locality, when the climates of the different places from and to which the animal is transferred, are not similar; murrain may be occasioned by a damp and unhealthy locality, by the generality of the foregoing causes, by infection of the epidemy, and by contagion, &c.

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* This is especially true of the homœopathic treatment of murrain. The fear is that the vital energy should become exhausted and sink. But, whereas, under the old system, the drugs themselves were as conducive to this consequence as the disease, homœopathy recognizes no exhausting resources, and not only does not sap the strength, but, by the analogy of the medicament to the symptoms, accedes to assist nature in the expulsion of this incubus of humors, and to promote and hasten the suppurative process.

184. Common Cold and Influenza amongst Horses.—Common cold may either be a simple and very tractable affection, if appropriately managed, or it may degenerate into catarrhal fever or influenza, and thence into inflammation of the lungs, or into putrid malignant fever; or again, may finally result in chronic cough, thick wind, broken wind, whistling or wheezing; or taking another turn, and developing itself in the membranes of the nose, in particular, it may proceed to the nasal discharge or glanders, as hereinbefore noticed.

Symptoms.—In the incipient stage, and throughout the course of an ordinary cold, the almost invariable attendant will be a cough, more or less severe; a degree of febrile action (evinced by a slight variation of the pulse); the coat will be rather dull and rough; the eyes and nose will be affected with more or less discharge (watery or white); should the cold degenerate into influenza (distemper), the pulse will become greatly accelerated, assuming, also, in some cases, a degree of fulness; shivering sets in; the cough will become more frequent, and evidently painful; the animal testifying much uneasiness, shifting from foot to foot, snatching the feet from the ground, or even stamping and pawing; the flanks begin to heave; the mouth in particular, and the general surface becomes hotter; the discharge from the nostrils becomes thick and lumpy, and gradually changes from that of clear and fluid, and afterwards thick and whitish phlegm, to that of thick, discolored, and offensive matter; the interior of the nostrils varies from dull redness to a pale purplish hue, with heat and tenderness; the eyes are half closed, and, upon examination, the conjunctiva will be found trils and eyelids, dulness, drooping, and rapid loss of condition; hurried respiration, frequent sneezing, vivid redness of the interior of the nostrils and of the eyes, succeeded by a blackish-purple hue, loss of appetite and suspended rumination, swelling of the nostrils, lips, and occasionally of every part of the head, the admixture of blood in the discharges, trembling of the whole frame, lethargic stupors or loss of consciousness, and rapid sinking of energy.

186. Nasal Discharge, or Sniffling of Pigs, like all other catarrhal complaints, may be occasioned by any undue exposure, especially in very damp and imperfectly-drained situations, or by want of a sufficiency of clean, dry litter;—assuming, however, the character of glanders and distemper (of the horse and dog), as also of all phthisicky disorders, it is transmitted, hereditarily, from litter to litter.

Symptoms.—The earliest manifestation of sniffling or sniffles consists of a thin watery discharge from the nostrils, which, however, progressively increases, and is soon followed by a painful cough, sneezing, and often, also, by discharge of blood from the nostril, which seems to operate as a palliative of the rest of the symptoms, although the continual return of such discharges constitutes the most serious symptom of the disease, whereby the vital energy is gradually exhausted, and confirmed phthisicky habit is induced. As the disease advances, the nostril becoming swollen and distorted, with permanent thickening of the membranes,—the snout is peculiarly affected, as if by an irregular distribution of muscular power, occasioning the contraction of one side.

187. Treatment.—Many of the indications for the medicines required in the various disorders, whose names stand at the head of this section, have already been given, especially under the titles of "Diseases of the Head and Nose," under the "Epidemic Catarrh of 1872 among Horses," and under the "Cattle Plague of Great Britain," which last may be regarded as a malignant form of murrain. But we propose here to set down in order the principal characteristic symptoms of the most important remedies for the diseases described in this section in one consecutive view; reference being made also to those already given with respect to the head and nose, and to those which in a subsequent chapter will appear under the head of the more particular bronchial and pulmonary disorders and cough.

Aconite will be indicated in the earliest stage of all these affections, excepting always those that are marked even in their onset by symptoms of debility and prostration; hard pulse, high fever, severe local inflammation, as of the eyes, nose, and throat, and dry, sympathetic cough, all point to Aconite. Local congestions and inflammations, which may arise in the course of any of the above-named disorders, will also indicate the use of Aconite, either by itself, or as an intercurrent remedy with others suited to the prevailing type of the original disorder. Aconite may be given in doses of from four to ten drops, in a little water (see page 34), every hour, or every two or three hours, according to the size and age of the patient, and according to the violence of the symptoms. Violent symptoms do not necessarily require larger doses; but they do require that the doses be oftener repeated; for the more rapid the course of the disorder, that is, the greater the (physiological) pathological excitement, the more rapidly is the action of the medicines exhausted. The decline of the violence of the symptoms, and the appearance of others which indicate a favorable crisis, such as perspiration, nasal flow, or loose cough, for example, will lead to the suspension of Aconite, and the substitution of another remedy more exactly suited to the changed condition.

Dose.—See further directions for dose at the close of this article.

Ammonium carbonicum.—Lachrymation. Discharge of bloody mucus from the nose. Bleeding from the nose. Soreness of the throat. Heat and dryness of the mouth and throat. Flow of saliva. Thirst. Retention of stool succeeded by loose stool. Discharge of blood during and after the evacuation. Urination frequent, copious, involuntary. Heat of the female sexual organs (vulva). Dry cough. Alternate chilliness and heat. Coldness of the extremities. Excessive languor. For other indications consult the Materia Medica. Carbonate of Ammonia, popularly known, in solution, as *Hartshorn*, is a remedy of the first importance in catarrh and influenza, even of the severest epidemic variety; it has many of the symptoms of *blood-poisoning*, and has been found of the greatest value both externally applied as a liniment, and given internally, in these disorders, and even in the murrain or cattle plague and fatal epizootic of horses.

Dose.—From six to ten drops mixed in a pint of water, and a wineglassful given once in two or three hours.

Ammonium muriaticum is very similar to the Carbonate just described; but may be more particularly indicated by ulceration and bloody crusts about the nose; inflammation of the throat with *swelling of the glands of the neck*, such as occurs in horses with influenza; distension of the abdomen, with much flatulence, relieved by loose stools; loose, yellow stools, with great urging, and soreness of the anus. Urine scanty, frequent, bright yellow, or bright red. Violent, dry cough, *worse on drinking;* evening chilliness; frequent attacks of fever; weakness of the limbs; worse on the right side.

Dose similar to Ammonium carbonicum.

Arsenicum.—Eyes water profusely; bleeding from the nose; dryness of the nose; fluent coryza; flow of acrid water from the nose. Tongue white, brown, or blackish. Offensive smell from the mouth. Small ulcerated spots in the mouth. Thirst. Inflammation and soreness of the throat; *gangrenous* appearance in the mouth and *throat;* dry throat; difficulty of swallowing. Loss of appetite. Heat and burning in the abdomen. Swelling of abdomen. Flatulence. Diarrhœa; worse at night; putrid stools; dark stools, or black, or bloody. *Urine* involuntary, *bloody.* "Red water;" "black water." Dry cough. Shortness of breath. Difficulty of breathing, with cold sweat. Dropsical symptoms. Dropsy of the chest. Swelling of the legs. Coldness of the legs. Fever, *alternately hot and cold.* Cold, clammy perspiration. *Excessive debility. General, rapid failure of strength.* Emaciation. Trembling of the limbs. Stiffness and immobility of the limbs. Shuddering; aggravation at night, after midnight, on lying down and on exercising. Relieved by warm applications. Arsenicum is thus seen to be indicated in the worst forms of epidemic catarrh and influenza, and to correspond to cattle plague and malignant horse distemper or "horse-ail." This remedy should be given in small doses at first, as some animals are very susceptible to its influence. Even the horse, which is said to have taken many grains of the pure drug with impunity, has been known to be made very much worse by a few doses of the third decimal trituration. Give, therefore, at first, four or six-drop doses to horses; much larger doses may be given to oxen and cows, ten drops, and these doses may be repeated in three or four hours; or where many doses are likely to be needed, twenty drops may be dissolved in one quart of water, and a wineglassful given once in three or four hours, or less often, as the severity of the symptoms and the improvement may require. Different sizes and ages of animals should receive proper attention in respect to the size of the dose, as already indicated. Often, however, it may be desirable to give an intercurrent remedy, such as Belladonna, or even Nux vomica, in alternation.

Belladonna.—This remedy is remarkably suited to many forms of disease of domestic animals affecting the head, and which have also a malignant element. Adapted to pure inflammation of the brain, it likewise aids materially in the cure of such virulent disorders as the epizootic in horses and the rinderpest in cattle.

In influenza and many other forms of disorder affecting the head, [illegible] the first years [illegible]

[illegible] smaller [illegible] generally [illegible]

[illegible]

[illegible]

[illegible] And [illegible]

Camphor. Influenza [illegible] weather. **Prostration** of [illegible] forces [illegible] urine. [illegible] the prompt reaction which Camphor accomplishes, give from ten to twenty drops of the strong tincture in a little hot water, and repeat the dose till the chilliness is relieved by the appearance of a free perspiration. Camphor in this manner may be given to antidote *narcotic poisons*, in case any domestic animal should have accidentally swallowed such. But strong black coffee is generally more reliable in these cases. Strychnia, the active principle of Nux vomica, is only to be antidoted by plenty of Tincture of camphor, given in as little water as may make it drinkable.

Euphrasia.—This is one of the most important remedies in epidemic influenzas; it is indicated by burning tears; corrosive tears and violent coryza; dry cough; aggravation in evening, from light and from motion. For numerous other indications consult the Materia Medica.

Dose.—Six drops once in three hours.

Ipecacuanha.—Particularly useful for catarrhal affections of sheep; loose cough; rattling of phlegm; frequent, incessant, dry cough; danger of suffocation from bronchial catarrh; coryza; nausea; vomiting of food; diarrhœa, green, or fermented stools; bloody urine; drowsiness; shuddering. For many other symptoms, consult the Materia Medica.

Dose.—Four to ten drops every two or three hours.

Nux Vomica.—One of the most frequently indicated medicines, for horses particularly, and for a great variety of complaints. Its chief characteristics may be found in the Materia Medica, and especially in the "summary" of its symptoms. Nux vomica will be needed when the bowels are constipated, or relaxed at one time and confined at another; the evacuations are hard, lumpy, and covered with mucus; there is tendency to drowsiness, and apparent paralysis of the hind legs; *staring look from the eyes;* coryza; fetid odor from the mouth; soreness of the throat; tongue black, or dark red; spasm of the stomach; colic; difficulty of passing urine, ineffectual urging; urine scanty, red, bloody; cough dry; shortness of breath; difficulty of breathing, worse from motion or exertion.

Pulsatilla.—For the milder forms of influenza, with evening aggravation, as already stated with respect to nasal catarrh, this remedy is invaluable. It is especially useful also for sheep. Flow of tears; yellow or green, or fetid discharge from the nose; white coating on the tongue; loss of appetite; colic; rumbling of wind in the bowels; bloating of the abdomen; diarrhœa; watery mucus, slimy; retention of urine; frequent urination; brown-red urine; cough dry in the evening; loose cough in the morning; oppressed respiration; shortness of breathing; coldness; shuddering; evening fever; symptoms relieved by exercise, and in the open air; worse in a warm stable, and at night, before midnight. (Arsenicum worse after midnight.)

Dose.—Six drops once in two, three, or four hours.

Mercurius.—This remedy much resembles Belladonna in the character of its symptoms, but they are less violent. It is especially indicated where there is slavering or profuse flow of saliva; offensive breath; yellowness of the eyes; bilious stools, dysenteric stools or straining.

Phosphorus will be needed when the influenza seems to extend to and involve the lungs; threatened congestion of the lungs (with Belladonna this remedy is often alternated in such cases). Phosphorus is suitable for a loose or for a dry cough.

Dose.—Six drops every three hours.

Sulphur.—An occasional dose of six drops of this powerful medicine will sometimes greatly improve the efficiency of other and more closely indicated remedies. It will be found useful in loose catarrhal cough; for influenza which tends to become chronic and run into inveterate nasal catarrh. Upon all the mucous membranes Sulphur produces discharges of mucus which may be acrid or burning; constipation; pimply or vesicular eruptions on the skin; rattling of mucus in the chest; cough worse in the morning; unsteady gait; debility.

Dose.—Six drops every morning.

Lachesis.—This remedy may be required in disorders affecting the throat and glands of the neck, even those of the most dangerous kind; throat greatly swollen externally and internally; discharge from nose and mouth of an intensely fetid and excoriating fluid; tenderness of the external throat to the touch, the slightest pressure there causes violent cough; the disease in the throat, commencing in left side and extending to the right, indicates this remedy. *Gangrenous appearance of the fauces.* Gangrene of any kind, even that arising from wounds (traumatic gangrene) will suggest Lachesis. It will also be indicated by coryza, thin watery discharge from the nose; blood and matter from the nose; tongue red, dry, or *black;* diarrhœa in alternation with constipation; putrid stools; *urine scanty, black;* difficulty of breathing, worse after sleeping; coldness of the limbs, worse after sleep.

Lycopodium.—This remedy has been found useful in affections of the chest or other parts, where a peculiar *fan-like movement* of the wings of the nose has been observed. Corrosive coryza; dry, black, or cracked tongue; inflammation in throat beginning on the right side and extending to the left; rumbling of flatulence in the abdomen; constipation; putrid stool; urine profuse, pale, or *dark* and *scanty,* with brickdust-like sediment; cough (dry at night) loose by day, brought on always by descending a hill; difficulty of breathing, shown by the least exertion; chilliness in afternoon.

Dose.—Six drops every four hours.

In veterinary, as well as in human medical practice, there is a constant tendency to give too much medicine; and this is facilitated by the ease with which a few drops of the liquid may be placed on the tongue. But much economy of valuable remedies may be secured, and at the same time far better results in healing the sick, by mixing thoroughly in a pint bottle used for that purpose (and if possible for that medicine alone) from eight to ten drops of the selected remedy, by violently shaking the whole several times; of this new dilution a wineglassful, or tablespoonful, will in most cases exert as beneficial, if not as immediately powerful, influence, as the whole ten drops could have done if placed upon the tongue at once. This method is here detailed, as pointed out already on page 37, for use in other forms of the disorder as well as in this.

For other and in some respects more particular indications of these remedies consult the Materia Medica.

The following additional medicines have been recommended in one or the other of the disorders above described, and the special indications for these also may be found in the Materia Medica: Calcarea, Carbo veg., Causticum, Silicea, Chamomilla, Antimonium c., China, Platina, Conium, Cina, Hepar s. c., Arnica, Hyoscyamus, Sepia, Sambucus, Nat. m., Nitric acid, and Veratrum.

As convalescence appears, in these as in other disorders, the intervals between the medicines should be lengthened, and all medicines may occasionally be omitted for a day or two, in such cases with advantage, and then resumed. Equal temperature and ample ventilation should always be secured. So far as possible, great attention should be paid to cleanliness, fresh litter should be supplied twice a day, and an abundant supply of fluids for drinking, which should have the chill taken off in cold weather. In all epidemic or contagious varieties of disease separate stabling should be secured so far as practicable, and warm bran mashes, nutritious and unstimulating food, should be provided.

188. Distemper of Dogs.—This disease appears either as the result of particular causes or as an epidemic, and is always highly contagious. It exhibits the most perplexing variety of complications, gradations, and symptomatic developments. There is no limit of age which will be a safeguard against it; but it is less serious as occurring amongst dogs in the full vigor of their prime than in very young or very old dogs. Nor, again, is a previous attack of distemper a safeguard against a second. There is no limit to the period over which the course of this disease may run. It may have appeared and have been subdued, or have terminated fatally, in a few days, or it may linger over several months. Distemper is also doubly endemic; first, as regards localities, and secondly, as regards breeds. Those breeds which are most subject to the disease are those in respect of which it assumes the most virulent character; the Newfoundland pointer and setter may be classed amongst breeds which are particularly subject to distemper. In its earliest stage, like glanders, it may be considered as a local affection of the mucous membranes of the nose, but which is rapidly communicated to the membranes of other organs. Its first stage, therefore, is that of nasal catarrh. Some writers have set up a distinction between distemper and nasal catarrh. It appears to us to be a distinction without a difference. The symptoms which have been described as characterizing this different disease are the identical symptoms of one of the many modifications of undoubted distemper. Inflammation of the lungs may transpire as a complication. At other times the inflammatory process attacks the intestinal canal more distinctly and severely.

Causes.—General atmospheric influences, contagion, scanty and insufficient food, acute disorders; mange not unfrequently degenerates into distemper; inflammatory disorders affecting the respiratory apparatus; severe exposure to transitions of temperature, wet, &c., and all circumstances which tend to exhaust and depress the vital energy.

Symptoms.—Gradual and progressive deterioration of appetite and condition, accompanied by a peculiar depression, and disinclination to be disturbed; the evident deterioration of the superior faculties; the intelligence and keener instincts becoming impaired, and the natural devotion of the dog appearing to abandon him; the animal becoming sullen, or rather inanimate, and apparently but half conscious of familiar sounds; slight watering of the eyes and nostrils, and sometimes a slight secretion of matter during the night, distinguishable in the corners of the eyes in the morning; these discharges increasing, either slowly or rapidly, and a considerable accumulation following, to the obstruction of the nostrils and the agglutination of the eyes. The discharge of matter from the nose becomes white, thick, and agglomerated, and will occasionally be expelled in quantities by sneezing, or it will adhere to the nostrils, drying about the orifice, and obstructing the nose. If the disease attacks the digestive functions, excessive relaxation ensues, the excrements being intolerably fetid, at first, ash-colored or white, or lead-colored, or grayish-brown, and gradually betraying more and more the presence of blood and phlegm. Or, in other cases, the chest symptoms predominate, and we may identify the presence of inflammation of the lungs;* the vessels of the eyes are dilated, murky, and of a brownish-yellow red hue; the white of the eye is injected; the fever symptoms are strongly developed, and the loss of flesh is more rapid; the peculiar husky, hawking cough of distemper, which is easily distinguishable by the muffled, stifled absence of sound. The dog will continually appear to suffer from cold, although the external development of heat will invariably be increased, and sometimes to a very considerable degree, whereas the animal will shiver, and crouch before the fire, or coil itself up in a corner, as much sheltered from cold air as possible. In many instances, the symptoms above described, in respect of the eyes, are superseded by severe inflammation of the eyes, with bright, fiery redness of the conjunctiva, and excessive tenderness of light, which rapidly proceeds to the development of spots, and deep granulating ulceration of the cornea; the ulceration consists, at first, of one small circular and superficial spot, upon the centre of the globe of the eye, which extends on every side, and eats into and through the substance of the cornea, so as to admit of the escape of the transparent humor from within, out of which the protruding fungous granulations arise; but it is very rare, severe as is this inflammation of the eye in distemper, that, in cases of recovery from the disease, the sight remains permanently affected. The internal irritation, emanating from the inflammatory action of the membranes of the nose and of the eyes, is, however, communicated to the external surface of the brain; the discharge from the eyes is often suddenly suspended, whereas the nostrils continue to be affected by it; drivelling of saliva supervenes, with more or less foaming at the mouth, and convulsive action of the nether jaw, with or without convulsive jerking, or muscular twitching of various parts of the body, the muzzle, nose, eyelids, &c., in particular. These symptoms constitute the prelude to the fits which are incidental to distemper, and which are easily distinguishable in the premonitory stage which precedes them; whereas paroxysms of the same nature attending other derangements are invariably sudden. It is also remarked that the fits incidental to distemper are preceded by a sudden morbid and voracious appetite, strangely contrasted with the absolute repugnance to food which has preceded it.

189. **Treatment.**—Most of the following indications for the treat-

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* See the article on that disease.

ment of the distemper of dogs are taken from Dr. James Moore's *Handy-Book of Veterinary Homœopathy.*

Aconitum, in the first stage, when there is dulness, loss of appetite, inflamed, watery eye, quick breathing, and accelerated pulse. It may also be resorted to at a later period of the disease to check the tendency to local inflammations.

Belladonna is indicated, especially when the eyes and throat are affected, as indicated by sensitiveness of the eyes to light, increased vascularity of the white of the eye, and of the inner surface of the lids, agglutination of the lids, and evident pain in these parts; and, as regards the throat, by an inflamed appearance of the back of the mouth, and by dry, irritating cough, evidently excited by irritation at the top of the windpipe. It is also a valuable remedy when the brain is involved, with such symptoms as delirium and fits. In some cases of encephalitis, it may be necessary to give *Aconitum* and *Belladonna* in turns.

Bryonia is required when symptoms of bronchitis set in, viz., short, hurried, and oppressed breathing; rattling of mucus in the chest; frequent moist cough, &c. Both this medicine and *Aconitum* may be needed in such a case as this.

Arsenicum (second dilution), is indicated by these symptoms: intense injection of the vessels of the eye; swelling and closure of the lids; profuse secretion of tears, and intolerance of light; ulcers and specks on the cornea. Also, by frequent sneezing and profuse discharge of thin, acrid mucus from the nostrils, with obstruction; or an offensive and bloody discharge from ulceration of the nasal membrane; also when the bowels are affected, with frequent discharge, accompanied by colicky pains, straining, weakness, and exhaustion. This remedy is indicated whenever the disease has prostrated the powers of life, the animal then being emaciated, weak, without appetite, and otherwise in a state apparently lifeless.

Phosphorus is indicated particularly when the lungs are inflamed, as shown by the rust-colored expectoration, the labored breathing, and the characteristic signs heard on examining the lungs. It is also a good remedy for the diarrhœic complication, when the discharge is thin and slimy, or even bloody.

Phosphoric acid has been of service when there is excessive, slimy, or watery diarrhœa; fetid, purulent discharge from the nose; and general prostration.

Mercurius corrosivus (sixth dilution), is indicated when the mouth is covered with small superficial ulcers, the secretion of saliva increased, and the breath offensive; and also when there are frequent discharges of bloody mucus from the bowels, with colic, urging, and straining.

Mercurius is more particularly required for the so-called "yellow distemper," the amount of which may be anticipated by the diminution or absence of the natural coloring matter in the excrement. When this is observed, or when the disease is established, Mercurius should be immediately given in ten-drop doses every three hours, or less often, according to the severity of the symptoms. Should a feverish condition exist at the same time, intercurrent doses of Aconite—six to ten drops—may be given in alternation.

Rhus tox. must be given when the convulsions have attacked several parts simultaneously.

Cocculus indicus should be considered in the same connection.

Veratrum may be needed in cases where diarrhœa forms a prominent symptom.

Nux vomica will be required when there is loss of appetite; short, husky cough; sudden loss of strength, especially of the hind quarters, which he drags behind him; constant desire to evacuate the bowels, but very little passes from them.

In addition, consult in the Materia Medica, *Causticum, Cuprum, Hepar, Kali carbonicum, Iodine, Stramonium*, and *Sulphur*.

Dose.—See p. 34; and consult directions at close of preceding article.

The diet should be very carefully attended to, no solid food, and above all, no meat should be allowed until the disease is entirely removed. Meat broth or gruel are suitable, with cold water for drink, when there is much fever; boiled rice and milk and bread are suitable during convalescence.

SECTION III.

INFLAMMATION OF LINING MEMBRANE OF THE WINDPIPE—INFLAMMATION OF THE BRONCHIAL TUBES—PLEURISY—INFLAMMATION OF THE LUNGS—CHRONIC COUGH—THICK WIND—BROKEN WIND—ROARING—WHEEZING—WHISTLING—PLEURO-PNEUMONIA—BLEEDING FROM LUNGS—CONGESTION OF THE LUNGS—ASTHMA—DROPSY OF THE CHEST—DROPSY OF THE BELLY.

190. Inflammation of the Lining Membrane of the Windpipe.—Inflammatory affections of the upper part of the windpipe are prevalent amongst sheep and cattle, especially in the spring and fall of the year, when the transitions of temperature are frequent and considerable, and when the uncertainties of weather render the atmosphere particularly unhealthy.

Symptoms.—Amongst sheep we observe more or less discharge from the nose, but thinner or more watery than that which occurs in catarrh or influenza; sneezing occasionally takes place, with expulsion of phlegm, but is not necessarily attendant upon laryngeal inflammation; the neck is stretched forward, to gasp for breath, and to facilitate the passage of the breath; the mouth is open, and there is a sharp, shrill, ringing cough, which identifies the disease. The disorder sometimes proceeds to the complete obstruction of the opening of the windpipe, by the dilatation of the membranes. Amongst cattle, we may first notice accelerated pulsation, increase of heat generally, and about the throat in particular, the respiration a little impeded, the strength failing, and the appetite and rumination affected; slight swelling and extreme tenderness of the neck externally, from the part in the centre of the nether jaw downwards, which increases more or less rapidly; the deglutition becomes difficult, and evidently causes severe suffering; the head and neck stretched forward, and continually in one position, movement to the right or left, &c., being excessively painful; in some cases a thick, white, or more or less yellow and bloodstained matter, generally very offensive, and mingled with shreds of false membrane,* is ejected, or exudes from the mouth and nostrils.

191. **Inflammation of the Bronchial Tubes** is generally attendant upon, or the forerunner of inflammation of, the substance of the lungs; and the first appearance of incipient symptoms should be the signal for prompt and appropriate treatment. Owing to the construction of the quadruped, the lungs and air-tubes are yet more susceptible of being affected by the state of the stomach; wherefore, when bronchial inflammation occurs unaccountably upon good, dry, and healthy upland pastures, and, as is occasionally but rarely the case in the finest summer weather, &c., &c., we must consider the state of the digestive functions, and may not unfrequently find that it arises from the extension of an irritation produced in the intestinal canal by the presence of worms.† On low, marshy, swampy soils, and in the spring and fall of the year, it is sufficiently accounted for. A further complication, often, or, perhaps, generally, supervenes amongst cattle, if this

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* This is evidently the formation and detachment of a false membrane. Some writers seem to attribute the appearance of these shreds to the dislodgment, bit by bit, of the mucous membrane itself. This hypothesis is, however, quite superfluous.

† It should not be omitted, moreover, that young animals are very subject to a severe form of bronchitis, in which a profusion of worms are generated actually in the air-cells and windpipe. Pigs appear to be subject to bronchitis, in most cases attended or characterized by the presence of these parasites.

disease be long neglected, in the shape of inflammation of the membranes which envelop the lungs, or pleurisy. Young animals are mostly subject to it.

Symptoms.—Amongst cattle the premonitory stage, which is more or less protracted, is characterized by a peculiar wheezing, husky, thick cough;—the irritation, if unarrested, will extend further into the interior of the air-cells, and assume the character of severe inflammation; labored, evidently painful wheezing, and much accelerated respiration will ensue, the breath becoming intensely hot; there is then absolute repugnance to the least movement or change of position; or, if compelled to move, the coughing immediately ensues more severely; the animal appears to dread the cough, and to try to stifle it; the expression becomes extremely depressed, and the general appearance sunken and cadaverous; the loss of flesh is inconceivably rapid and complete, the animal being quickly left with every bone distinctly traceable, and the skin adhering to the flanks; the coat is staring, the belly corded and tucked up, sometimes the flanks heave much, and the cough is particularly frequent, painful, and with little remission. The flanks, however, are not particularly tender externally, and the animal will bear percussion or pressure without wincing. Nor can we perceive any indication of suffering about the flanks in the movements of the animal. These symptoms are sufficiently identical in this disease amongst horses, sheep, pigs, &c., to guide the reader in his diagnosis.

Doses.—During the incipient stage, or as a preventive treatment during the epidemic prevalence of the disease, the administration should be continued night and morning for a week. When highly inflammatory symptoms supervene, we may give three doses, at equal intervals, in the first six hours; and afterwards a dose every four hours, until amelioration ensues.

192. Pleurisy.—Pleurisy amongst pigs occurs as an epidemic disease, but it may be traced to particular causes, also, such as severe exposure to heat, overdriving in hot weather (especially if the animal be fat), the insufficient supply of water,—or even to the foulness, closeness, and stagnant moisture of the sties, or occasionally to the superabundance of dry and heating food.

Symptoms.—Intense thirst and evident general increase of heat, the animal eagerly seeking for moisture to wallow in; the animal becomes rapidly dull, depressed, and averse to motion, and continually grunts in a peculiar, painful manner; the skin is intensely hot, the stomach is hard and distended, the flanks heave, the urine is scanty, the breathing is difficult, rapid, and impeded, the evacuations are hard, difficult, and scanty; the eyes are weeping, and a short, sharp, or stifled and interrupted cough prevails; subsequently the animals lean for support against the walls or other fences of the sty, but cannot lie down, or if they move the gait is staggering and uncertain; there is rattling of phlegm in the throat, and the limbs are sometimes rigid, always unnaturally disposed.

193. **Amongst Dogs** pleurisy is of two kinds, acute and chronic, and is especially characterized (when acute) by short, stifled, interrupted cough, with a peculiar twitching in the sides, and extreme uneasiness, and evident impatience,—by the continual erect position of the animal (generally seated), and by excessive tenderness of the flanks, the animal recoiling from contact; shivering of the whole frame, especially of the forequarters, with evidence of fitful, colicky pains, and succeeded by perspiration, either about the cheek and flanks only, or throughout the frame. There is also short, interrupted, and irregular inspiration, followed by full and strong expiration,—but the breath is not heated, and subsequently becomes cold (with the continuance of effusion); fuller inspiration follows, which becomes longer (as effusion continues), the cough being then suppressed, fitful, or altogether subdued,—but motion produces difficulty of breathing; the cough is at first dry, short, and faint; and the pulse small, accelerated, and wiry. When pleurisy degenerates into a chronic affection, the cough becomes fitful or frequent, dry, or sometimes attended with expulsion of phlegm; there is more or less watery swelling of the chest and stomach, and sometimes also of the extremities (the fore legs chiefly), and occasionally a purring or gurgling sound attendant upon the breathing; the inspiration is now invariably deep and prolonged, and the expiration short and abrupt. The repeated and constant recumbent position is especially characteristic.

194. **Pleurisy amongst Horses** differs from inflammation of the substance of the lungs, with which it is intimately connected, in respect of the pulse in particular, which does not indicate the peculiar oppression, but is generally full and hard; the flanks are exceedingly tender of contact or pressure; the nostrils will be expanded, but the interior surface little if at all characterized by the fiery inflammatory hue which attends upon inflammation of the lungs; in other respects there is much similarity of symptoms. If this disease assumes a chronic character, there is gradual development of dropsical swellings, and

more or less crepitation upon pressure of the chest, belly, &c. (See "Inflammation of the Lungs.')

195. Pleurisy of the Ox, Cow, &c.—A disease which is more prevalent amongst cattle than inflammation of the lungs, whereas the latter more frequently attacks horses; it is generally caused by exposure to moisture and cold, and may follow calving if the cow be neglected and proper provision be not made to protect her from the noxious effects of such influences. It may also be occasioned by mechanical injuries.

Symptoms.—The respiration is not so much oppressed, as catching and interrupted whilst inhaling, whereas the exhaling is full and prolonged; an undulating surface is manifested on the flanks or in particular parts of the side; the parts about the loin, and the nether side of the shoulders, or the whole side may be very susceptible and tender, recoiling from the slightest contact; the cough is faint (not sonorous), abrupt, and short, and appears to be attended with acute suffering, and a peculiar twitching motion may be observed in the sides. The incipient symptoms are purely distinctive and characteristic; such as the peculiar shivering and trembling which occur especially about the shoulders and chest, whether in rest or motion, or the general shivering affecting the entire frame.

Regimen.—Warmed fluids (except to dogs) in sufficiency, but no dry or substantial food; avoidance of all stimulating ingredients; free ventilation without exposure; the removal of all moisture or soiling from the litter.

196. Acute Inflammation of the Lungs amongst Horses.—To this disease the horse is particularly liable; catarrhal affections or affections of the respiratory organs generally being less liable to attack the covering membranes than the substance of the lungs.

Causes.—The susceptibility of the horse to inflammatory affections of the lungs arises from the frequent occurrence of the causes which provoke it in the general habits and management of the animal; the omission of proper precaution in removing all ordure or soiled litter, and the consequent inspiration of a pungent, impure vapor which exhales from it, is too frequently numbered amongst the direct causes; the pernicious habit of excluding the proper access of fresh air under the mistaken notion of maintaining sufficient heat, whereas it is also clear that the extreme variation between the heat of the stable and that of the open air will be liable to provoke affections of this kind when the animal is repeatedly exposed to sudden transitions from the one to the other; coddling and clothing the horse in the stable, whereby the pores are opened and the general surface relaxed, whereas the animal is suddenly called from the stable in cold or wet weather, necessarily without any covering (by which means the transpiration is suddenly checked); undue exposure to vicissitudes generally; and lastly, errors of feeding (such, for instance, as a superfluity of chaff, &c.), which, however, applies more strictly to chronic affections of the kind.

Symptoms.—These are more or less suddenly developed, or they are preceded by a slow incipient stage of cough, or of any catarrhal affection, as already described; the extremities cold and becoming gradually colder; the same of the ears; the breathing quicker and somewhat interrupted; the coat more or less staring; the animal loses vivacity and becomes listless, and the appetite is more or less deteriorated; all these symptoms become aggravated; the respiration becomes exceedingly accelerated; the expression becomes anxious and exceedingly depressed, and the animal maintains an erect position; the flanks are agitated by a hurried, panting, imperfect action of respiration (not deep heaving); the head is stretched forward, the nostrils become dilated, the inner corner of the interior in particular, and generally even the whole interior surface being of a vivid, fiery-red hue, which afterwards changes to a deep purple (the inner corner remaining as vividly red as ever); the animal does not lie down at all, or only for an instant at a time, and stands with the fore legs splayed out to the right and left, and rigid (in which position the animal remains for hours together); there is evidence of acute suffering from the flanks, towards which the animal languidly turns its head with an anxious, painstricken expression; the pulse is strikingly characteristic, being impeded, blended, not consisting of distinct pulsations, but of a permanent and thrilling distension of the artery; if distinguishable (which is not often the case, owing to the repletion of the vessels), the pulsation will be found excessively frequent and often irregular, especially in the advanced stages of the disease. Subsequently the legs and ears, and even the mouth and breath, assume a deathlike, clammy coldness (the previous coldness to a more intense degree), and grinding of the teeth supervenes. In the event of fatal issue, the animal will stagger and fall.

The disease sometimes degenerates into a chronic affection, of the character of local organic dropsy; in which case the animal will often appear to have recovered, saving the presence of a continued yellowish discharge from the nose, and the permanent irregularity of the pulse; in the event of the recurrence of the former acute symptoms, there is much question as to recovery. Of thick wind, roaring, chronic cough, &c., as the consequences of inflammation of the lungs, we shall presently have occasion to speak. (See No. 220, "Pleuro-Pneumonia in Horses.")

197. Inflammation of the Lungs amongst Cattle.*—This disease is more rare amongst cattle, as traceable to particular causes (pleurisy being more frequent), but it occasionally occurs in consequence of overexertion, attended with sudden transitions of temperature, and more frequently, also, in the character of an epidemic disorder of the most serious nature.

Symptoms.—Heat, or alternate heat and coldness of the ears and horns; short, panting heaving of the flanks; costiveness, with hard, black, fetid evacuations, or excessive relaxation, with black, perfectly liquid, and excessively offensive evacuations; the muzzle is dry, the cough is harsh and frequent (but rarely if ever moist); the head droops, the interior of the mouth and the breath are heated, appetite subsides, rumination ceases, and intense thirst supervenes; lassitude is manifested, and often a characteristic halting, especially in one of the hind legs. Subsequently, moreover, we may observe the stretching forward of the head and neck; the more violent agitation of the flanks; discharges of clear, watery phlegm from the nose and mouth, which soon becomes thicker, more adhesive, and more and more qualified by the admixture of matter and blood; the cough becomes more severe, occasionally convulsive (but it is never so severe or frequent as in bronchitis); preternatural brilliancy of the eyes, with lachrymation (sometimes profuse); the excessive tenderness of the whole course of the spine, and of the crupper in particular; grinding of the teeth; constantly erect position, or the animal rarely, if ever, lying down, and then only for an instant; the milk completely fails; tumors are alternately developed, recede, and reappear; there is continual change of the degree of heat in various parts, with or without local or general shivering; partial or general sweating, and occasionally hardness and swelling of the teats. As these symptoms become more urgent, the respiration becomes still more panting, difficult, and accelerated, with or without a purring sound; the nostrils are more extremely expanded, emitting phlegm variously discolored, and of a peculiar deathlike smell; the strength fails to the last degree; the limbs are gathered together under the belly, which is puckered together, the muscles being prominent; the evacuations become more and more liquid, offensive (even putrid), and appear to be attended with a great deal of urging; the eyes exude an offensive (putrid) matter, and become unconscious of objects; the pupils are dilated, and, if closely examined, deadened and filmy; the membranes of the mouth, nose, &c., and even the breath, grow cold, and the animal rapidly sinks.

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* See No. 221, "Pleuro-Pneumonia of Cattle."

198. Inflammation of the Lungs, or Rising of the Lights amongst Pigs, may be recognized by the usual symptoms attendant upon inflammatory affections of the respiratory organs, and by the rapid, short, and panting agitation of the flanks; continual and very severe cough, and total absence of inclination to eat (a symptom otherwise of rare occurrence).

Causes.—This disease is variously attributed to epidemic causes under unhealthy conditions of general treatment and feeding; or it may be occasioned more immediately by the same causes, such as the want of sufficient circulation of fresh air, the accumulation of ordure in the sty, and the consequent prevalence of obnoxious and pungent vapors, or by continually feeding upon overstimulating and irritating substances.

199. Inflammation of the Lungs amongst Dogs may be recognized by the following manifestations: the labored and painful panting for breath, the inspiration being prolonged and full, and the expiration abrupt, imperfect, and short; soft, yet strong, full, and accelerated pulse; severe cough, sometimes succeeded by more or less expulsion of bright bloodstained phlegm; general shivering of the whole frame (without indications of the colicky pains attendant upon incipient pleurisy); sweating developed in particular parts, such as the inner side of the thighs and along the flanks; the eyes suffused with a fiery red hue; the expression painstricken; the breath hot; the head stretched out, the position being continually erect (seated), and the tongue hanging out of the mouth or jutting from the lower lip, either terminally or on one side; in later stages, or if assuming a chronic character, the expulsion of the breath will become fitful and interrupted; or the breathing will be difficult and impeded with motion but neither short nor interrupted; or, again, either the inhalation or the exhalation will be interrupted, the cough occasional, abrupt, and half-checked and stifled, but in few cases attended with expulsion of matter or phlegm; or, again, the dog will frequently attempt to lie down, but will be unable to remain recumbent, the membranes of the nose, mouth, eyes, &c., will have a pallid and lifeless appearance, a discharge of matter very dark and offensive, grayish or almost white (and generally inodorous), will flow from the nostrils, and there will be rattling of phlegm on the chest.

200. Inflammation of the Lungs, or Rot of the Lights, amongst Sheep, may be identified by the following manifestations in its incipient stage: deterioration of appetite and imperfect or suspended rumination; the pulse accelerated and hard; continual and evidently distressing cough, with almost imperceptible agitation of the flanks: all these symptoms are rapidly exacerbated, and an offensive discharge from the nose succeeds, the pulse becomes impeded and indistinct; grinding of the teeth, and total neglect of feeding, with intense thirst, supervene; then, as the cough becomes more feeble, the pulsation is apparently wanting, the eyes become filmy and obscure, intense suffering is evinced in the expression, there is a crackling sound upon pressure when applied to the loins, the convulsive throbbing of the flanks supervenes, the cough subsides, consciousness fails, and the pulse is no longer palpable.

Causes.—Any cause calculated to provoke catarrh may resolve its effects into inflammation of the lungs; it is not unfrequently occasioned by shearing in unfavorable weather, by exposure to cold or wet after much exertion, &c., &c.

Treatment *of Inflammation of the Trachea, of the Bronchial Tubes, of the Pleura, and of the Lungs.*—We combine in one detail, the remedies suitable to these various forms of acute disorders of the respiratory apparatus, in order to avoid unnecessary repetition.

Aconite will be equally needed at the commencement of either of these acute disorders; it will in all be indicated more or less prominently, according to the severity of the symptoms, by hard and full pulse, quickened breathing, hot and dry mouth, and short, dry, and frequent cough; membranes of the eyes and nose injected.

Dose.—Ten drops dissolved in one pint of water, and one or two tablespoonfuls or teaspoonfuls given for a dose, according to the size of the animal, and repeated in one, two or three hours, according to the intensity of the symptoms; diminishing the frequency of the doses as improvement appears.

Belladonna.—Congestion of the lungs, in pneumonia; soreness of the throat; pain and difficulty of swallowing; violent fits of coughing, short, dry cough; apparent congestion of the head; redness of the eyes; wild look; tenderness and swelling of the glands about the neck and jaw. Belladonna is especially called for in bronchitis, and in pneumonia arising from or accompanying acute bronchitis. For old animals, this remedy may be preferred to Aconite at the outset.

Dose and repetition, see Aconite.

Bryonia is indicated for quick, difficult breathing; rattling in the windpipe and in the air-tubes in the lungs; frequent, dry, irritating cough; discharge of thick phlegm; sides painful to the touch; cough short and restrained, as in pleurisy; the animal grunts when the sides are pressed against; respiration abdominal; in pneumonia, the breathing although much shorter than in health is still performed by the ribs and diaphragm; while in pleurisy, the extreme tenderness of the pleura renders the elevation of the ribs and thorax almost impossible, hence the movement is performed by the flanks, or walls of the abdomen. And these considerations will often serve to distinguish between pneumonia and pleurisy, and to determine the choice, where the breathing is short, between Belladonna for the former, and Bryonia for the latter. While in pleuro-pneumonia, where the pleura and usually both lungs are involved, Belladonna will be useful in the very first stage, but will soon need to be replaced by Bryonia, on account of its healing influence on the pleura, which Belladonna has not. Indispensable in promoting reabsorption when effusion has taken place.

Dose.—Same as under Aconite.

Phosphorus.—The principal remedy in pneumonia; indicated by cough, at first dry, and after some few days loose, bloody, frothy; or rust-colored phlegm is coughed up: this is an invaluable indication for Phosphorus, but unfortunately it is seldom that domestic animals expectorate, and so permit to be seen the nature of the secretions from the bronchia in bronchitis or pneumonia. Hoarseness; noisy respiration; dulness of some portion of the lungs, discovered on auscultation. Consult the Materia Medica, and compare the symptoms of Phosphorus given under pleuro-pneumonia and cough. In the human subject the well-known indications for Phosphorus are "embarrassment of the respiration more or less marked, a bloody, muco-sanguinolent, or muco-purulent, badly-colored, difficult expectoration, and a decided exacerbation of the symptoms towards evening and during the night."

Dose.—Same as directed for Aconite.

Ammonium Causticum.—Lungs congested, in complication with influenza (horse epizootic); hurried, labored breathing, dilated nostrils, cold skin, pneumonia of a low form, verging on the typhoid.

Dose.—Six drops may be given the horse in a little water every hour or two hours. Proportionally smaller doses for lesser animals.

Mercurius Corrosivus alone of the mercurial preparations has produced pneumonia. But *Mercurius* (*solubilis* or *vivus*) is especially adapted to those forms of pneumonia which seem to be developed in *continuation of influenza*, and partake of a *catarrhal nature*, such as may be termed pneumonia complicated with bronchitis. This form of pneumonia is always an epidemic disease; we quote from Bæhr his description of the use of this remedy in the human subject, but the resemblance to the case of animals is so remarkable that even the inexperienced veterinarian will have no difficulty in discovering the condition of his patients to which this invaluable remedy is adapted, especially as there is an outward symptom which points to it (when it does occur, and probably always when this remedy is most required), and this is the *profuse and exhausting sweats:* "Under the modifying action of a widespread influenza, that is to say, of catarrh accompanied by a deep irritation of the nervous system, the nose, larynx, and trachea become affected with a slight catarrh, which seems quite trifling for a few days; suddenly the fever becomes more violent, the catarrhal secretion ceases, difficulty of breathing sets in, together with a spasmodic, general nocturnal cough, without any or a yellow-green, blood-streaked expectoration; the pulse is rapid and weak, small, and has very little resistance; the skin is burning, but at times covered with copious perspiration; the tongue is yellow and very soon becomes dry. Exploration (auscultation and percussion) shows extensive hepatization; that is to say, there is complete dulness of sound with râles, and attended with bronchial respiration. This condition resembles typhus to such an extent that we do not wonder at hearing many physicians assert that influenza has changed to typhus." In such cases Mercurius proved an admirable remedy. "The selection of Mercurius in broncho-pneumonia may be justified by its admirable action in bronchitis; for it cannot be denied that the greatest danger proceeds from this quarter, and that, after the removal of the bronchial symptoms, the remaining pneumonia is comparatively insignificant. A third form of pneumonia, which is particularly adapted to Mercurius, is the catarrhal form or lobular pneumonia."

Dose.—Same as directed under Aconite.

Arsenicum.—Indicated in the advanced cases of pneumonia, or pleurisy even, which are characterized (some even from the very first) by rapid and disproportionate prostration, tendency to colliquation and dissolution (of the solids and fluids of the body, as seen in diarrhœa, especially with offensive stools), marked periodicity of the more prominent symptoms, aggravation during rest and in a recumbent posture with excessive restlessness and anxiety, evident despondency, feeble pulse—all symptoms showing that the powers of life are rapidly and profoundly depressed, a condition which may result from extensive hepatization of the lungs in pneumonia, or even from copious effusion in pleurisy.

Dose.—Four drops, for horses, in a little water, repeated once in three or four hours.

Tartar Emetic.—Loose rattling cough. In chronic bronchitis this remedy seems to correspond to Bryonia in the acute form. Copious discharge of frothy mucus from both nostrils, in a horse; frequent moist cough; pulse 48 and full; respiration sixteen per minute. Such a case was promptly cured by giving *Tartar emetic* night and morning.

Sulphur may often be needed to complete the cure where convalescence has already set in, or to promote the action of other remedies, where there seems to be some obscure influence in the way of improvement beginning.

Dose.—Ten drops twice or three times daily.

For other remedies and indications consult those set down in the "Treatment of Pleuro-Pneumonia in Horses and in Cattle," No. 222, and also those given under the head of "Cough." Study all these in the Materia Medica, also Digitalis, Hepar s. c., China, &c.

201. Chronic Cough of Sheep.—This is invariably the result of mismanaged acute inflammation (in cases in which life is not immediately extinguished by them). It consists of a subacute inflammation, which proceeds ultimately to tuberculous decay. There are few sheep which are not more or less affected by it. But, inasmuch as they are despatched to the shambles very young, there is not much time for the disease to waste away or deteriorate the flesh: the cough will continue very long without affecting the appetite, but after a time it becomes more severe, the membranes lose color and become pale and flaccid, the caruncle and the vessels of the eye have no longer the characteristic redness of health, and afterwards loss of flesh, dulness, languor, &c., slowly and gradually supervene. In such cases the disease has changed its character, and has degenerated into consumption. (See Nos. 208–19.)

202. Chronic Cough of Horses may either be the result of any of the foregoing acute diseases affecting the respiratory apparatus, or of worms in the intestinal canal, the irritation of which reacts upon these organs. It accompanies thick wind and broken wind, which proceed from the first of the above-named causes. Excess of dry food will always aggravate it. Cough arising from permanent affections of the lungs: it will be provoked by eating; from irritation in the air cells,—and drinking, will induce a fit of coughing: if from worms, we may notice the appearances which are usually caused by those insects, which may be distinguished in the dung; and the cough will be rough, hollow, and sonorous; pressure of the throat externally will always provoke coughing, when the air-passages are the seat of the disease, but not invariably so when they arise from worms. (See No. 208.)

203. **Thick Wind** is likewise, in general, the result of acute inflammation, and more especially in the air-tubes, which become permanently obstructed by the incrustation or enlargement of the membranes. It may also be the result of fatness or malformation of the chest, but rarely, if ever, so in highly bred or fleet horses. It consists of very rapid, short, and difficult inspiration and expiration (in very quick succession), and will generally be followed by

204. **Broken Wind** if the animal be put to severe exertion. Broken wind is identified not so much by the rapidity of the inspiration and expiration, as by the second effort which attends the latter (being effected by two puffs as it were); whereas, the former (inspiration) is unaltered.

Causes.—Apart from the occurrence of broken wind as the immediate result of obstruction of the air-cells (thick wind), from previous and more remote acute inflammation, broken wind very often occurs amongst heavy draft horses, especially as the result of bulky feeding—straw-yard feeding, &c.—(the excessive proportion of fodder yielding little nourishment, and of which the animal consumes a great deal), particularly if the animal be habitually put to work directly after feeding.

205. **Roaring** consists of loud sonorous breathing, provoked by exertion (accelerated pace), especially up an acclivity, and is characterized by a peculiar groan uttered by the animal when suddenly struck or threatened.

Causes.—It may result from purely local inflammation, followed by thickening of the membranes, or from the extension of the inflammatory action of strangles to the air-passages, or from other like causes, or from a peculiar distortion of the upper part of the windpipe, occasioned by the strain of a tightened bearing-rein.

206. **Wheezing** is an affection sufficiently explained by the name, but in which the noisy breathing is continual, in rest as well as in motion. It is more directly the result of bronchial inflammation, and will often remain after it as a chronic affection.

207. **Whistling** is also explained by the name, but it is observable only after some continuance of rapid motion, particularly up an acclivity.

Treatment in the majority of these chronic affections of the respiratory apparatus resolves itself into

Regimen.—The food of a horse affected with chronic cough (proceeding from the lungs or air-tubes in particular) should consist as much as possible of a large proportion of fresh food of the better qualities. Early tares are very advantageous. Means should be sought to prevent it from eating the straw, and very little dry cut fodder should be afforded. The water should never be given quite cold. Transitions of temperature should be as much as possible avoided, as well as undue exposure. Ample ventilation, and regular exercise, without sudden and violent acceleration of pace, are essential.

The thick-winded horse should never be overfed (as is common, under the mistaken idea of providing for a long journey), nor should it be put into motion immediately after eating; regular and sufficient exercise, and other precautions, as just stated.

The broken-winded horse should be fed upon highly nourishing food of small compass, &c., so as not to distend the stomach, and communicate any pressure from the diaphragm to the lungs, &c.; carrots are very beneficial. The other directions as just stated. Also, consult the Materia Medica, and select

For worm-cough, from Belladonna, Bryonia, Dulcamara, Cina, Hepar s., and Sulphur.

For cough after eating, from Arsenicum, Baryta c., Calcarea c., Carbo veg., China, Kali carb., and Phosphorus.

For cough after drinking, from Aconitum, Arsenicum, Drosera, Hepar s., Lachesis, Ammo. mur., and Spongia.

For thick wind, from Arsenicum, Cuprum a., Ipecacuanha, Lachesis, and Tartarus emeticus.

For wheezing, and perhaps also whistling, from Belladonna, Carbo veg., Drosera, Dulcamara, Hyoscyamus, Ipecacuanha, Phosphorus, Sambucus, Spongia, Veratrum, and Nux vomica.

For the pulmonary fever, or "rot of the lights" in sheep, when assuming a low type, consult *Arnica*, *Ipecacuanha*, or *Opium;* and give the medicine whose symptoms, as set down in the Materia Medica, best describe the case; or two or more of these may be given in alternations.

Dose.—Six drops once in three or four hours.

208. Cough in General—Cough is the most common, the most obvious, and in some one of its forms the most universal symptom which presents itself in inflammations of the lining membrane of the trachea or windpipe, of the bronchial tubes, of the lungs, and of the pleura, or serous membrane which incloses them. In some chronic forms of these diseases, and in some still more obscure disorders of the respiratory apparatus, cough is almost the only indication of the abnormal condition. Hence it requires to be studied very carefully by itself; and for this reason we have taken pains to present in this section both a thorough description of the varieties of cough, and a careful statement of the characteristic cough symptoms and other obvious indications of the chief remedies which have been found useful in the coughs of domestic animals.

The varieties of this symptom, as dry, loose, &c., taken in connection with the accompanying conditions, greatly aid in selecting the remedy suited to the case. It is not, indeed, always possible, especially for an inexperienced veterinarian, or still more for a lay practitioner, to determine whether in a given case there is bronchitis or pneumonia; but if the symptoms are carefully compared, and the medicine selected in accordance with them, the patient will be in a fair way to improve, notwithstanding the uncertainty of the surgeon's diagnosis. And on account of the immense importance of the cough symptom in deciding the character of the illness present, we place before our readers the following very full discussion of the various kinds of cough, communicated by W. C. Lord, F.R.P.S., to the *British Journal of Homœopathy*,* and from the same authoritative source we subsequently quote the symptomatic indications of remedies in cough, to which also are added others suggested by our own experience and observation, and from other authorities.

209. Classification of Coughs.—1st. Idiopathic, which seems to exist independent of any other disease, cough being the prominent and only symptom.

2d. Symptomatic, when the cough depends on or accompanies other affections, such as bronchitis, catarrh, &c.

These may again be subdivided into acute and chronic cough.

The acute cough is of recent origin; is frequently symptomatic, and usually disappears with the disease to which it owes its origin.

The chronic cough is either a continuation of the acute for an indefinite period, or has been idiopathic from the commencement.

Causes.—These are, irritability or inflammation in some part of the mucous membrane lining the air-passages or lungs; nervous derangement, especially of the pneumogastric and ganglionic nervous system; dentition; organic changes in the thoracic viscera, or the passage of some foreign body into the respiratory tube.

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* British Journal of Homœopathy, Jan., 1869, p. 68.

Diagnosis and Pathology.—To distinguish the seat of cough and its cause is a subject of the greatest importance to the scientific practitioner, who places more confidence in the pathologic state of his patient and the well-known local action of drugs than in mere symptom covering. I will, therefore, endeavor tô explain (although a very difficult task) the diagnostic symptoms attending the various kinds of cough to which the horse is liable, and afterwards point out the homœopathic treatment which I have found most successful.

210. (1.) **The Cough from Dentition.**—This is loud, clear, and ringing, heard chiefly in the morning and at night; is met with in young horses, especially between four and five years old, when it seems to depend on nervous irritation, produced by the canine teeth or tusks coming up; the mouth is hot, and the bars of the palate full, as in "lampas." The horse evinces a certain degree of tenderness in eating his corn, and takes longer time about it than usual, yet his spirits are good and the general appearance healthy.

211. (2.) **The Pharyngeal Cough.**—It arises from irritation or inflammation of the pharynx, fauces, or neighboring glands; is not clear and loud, but moist, heavy-sounding, long, and as it were, hanging in the throat. This cough may be short and dry at the commencement, but only remains so until the secretions return, which they soon do, and in increased quantity.

212. (3.) **The Laryngeal Cough.**—This generally depends on irritation of the membrane lining the larynx, but sometimes on derangement of the recurrent nerve. It comes on in paroxysms, and is easily produced by compression on the top of the windpipe.

When caused by a dry state of the membrane, this cough is short and dry, has a hard, ringing or metallic sound, immediately followed by a long, harsh inspiration. When caused by derangement in the recurrent nerve, this cough is loud, dry, and spasmodic, and frequently chronic. As soon as the secretion returns to the membrane the cough becomes loose and less painful; instead of the cooing noise heard on applying the ear to the larynx in the primary or dry stage of the membrane a mucous rattle will now be heard. These sounds will help us materially in forming correct diagnosis.

213. (4.) **The Tracheal Cough.**—If the secretion from the membrane lining the trachea be increased the cough will be prolonged and moist, sometimes followed by a thick, white discharge from the mouth or nose. In this case the ear applied to the trachea will hear the mucous rattle, and compression will cause the animal to cough. If, on the contrary, the membrane be dry, so will the cough, and on applying the ear to the windpipe no moist sound will be heard, as in the former case, but instead either a shrill cooing or base sound—according to the size of the tube from constriction or deposition of lymph, and the dry state of the membrane. I have cured a case of tracheal cough of long standing where the aperture in the lower part of the tube was so small that a whistling sound could be heard during inspiration, and the cough was short, hacking, and feeble.

214. (5.) **The Bronchial Cough.**—This cough, at first short, hard, dry, and frequent, soon becomes muffled, moist, and prolonged, when the secretion returns. The absence of irritation in the upper part of the air-passages leads us to investigate the lower portion by auscultation, which alone can give a correct diagnosis. When the cough depends upon inflammation and dryness of the membrane lining the large bronchi, the ear or stethoscope applied to the hollow in front of the chest detects a cooing sound or rhonchus; but should the small bronchi be similarly affected, the ear applied to the sides of the thorax detects the dry or sibilant râles. As soon as the secretion returns and the cough becomes loose, the mucous rattle will be heard with diminished and often suppressed respiratory murmur until the secretion becomes removed by a cough. These abnormal and suppressed natural sounds, however, belong to symptomatic rather than idiopathic bronchial cough, which is distinguished by negative rather than positive symptoms, such as absence of fever, sore throat, or any other catarrhal symptoms; compression on the larynx or trachea, such as will produce laryngeal and tracheal cough, has no effect on this cough, which depends upon an irritable (not inflammatory) state of the bronchial membrane, and yields generally in two or three days to the homœopathic treatment, which I shall presently describe. The idiopathic bronchial cough is loud, dry, and comes on in fits or paroxysms at uncertain periods of the day, causing the animal considerable annoyance, but not interfering with the general health or appetite.

215. (6.) **The Pulmonary Cough.**—This is generally symptomatic of inflammation in the substance of the lung, or of some organic change, the result of previous inflammation. It is usually short, dry, and frequent, accompanied in the former case by dyspnœa and increased by percussion. As the inflammation increases, this cough becomes more constrained and painful, and ceases altogether. When inflammation is present in the parenchyma, auscultation detects the crepitant or other râles indicative of pneumonia. In chronic pulmonary cough, when organic change has taken place, it is usually indicated by absence of respiratory murmur in one or more circumscribed portions of the lung.

216. (7.) **The Broken-winded Cough.**—This cough, which usually betokens vesicular dilatation and interlobular emphysema, is always symptomatic of a morbid state of the nervous system, which it is necessary I should fully explain, in order that the treatment which has proved successful may become intelligible to the reader. The cough is generally at first spasmodic and paroxysmal, but soon becomes short, single, and so feeble that it can scarcely be heard at a few yards distance. To diagnose this cough is very easy, for not only is it peculiar in character, but it is accompanied by dyspnœa, and a double expiration or supplementary effort performed by the abdominal muscles. This is attributed by nearly all foreign and British authors to an emphysematous state of the lung, requiring this supplementary expiration to expel the extravasated air from the tissue which they suppose has been ruptured. Several veterinary surgeons, however, declare that they have examined broken-winded horses in which there was no emphysema (D'Arboval, Rodet, Volpi, Professors Dick and Sewell). In those cases which I have examined I have found the lungs much paler, and not collapsed, as usual, when exposed to atmospheric pressure.

I have also observed dilatation of the small bronchi and air-cells, as well as interlobular emphysema, but have not been able to trace the latter to rupture of the cell. By some, a thickening or other altered condition of the membrane lining the air-passages has been observed, which has been put down by Laennec as the cause of the cough, and the latter as the cause of the dilatation and rupture of the air-cells, which he assumes does exist. The pathological changes which have been (though rarely) seen, are atrophy of the heart, and lesion of the diaphragm. Dupuy, one of our best French authorities, first conceived the idea that it was a nervous affection, and said that he had produced symptoms somewhat similar by compression and section of the pneumogastric nerves; but our English authors, with very few exceptions, agree with Percival that "emphysema of the lungs is the true pathology of broken wind." Professor Gamgee, however, dissents from this doctrine in the following words. "In stating our opinion on the nature of broken wind, we unhesitatingly affirm that it is at first a purely nervous disorder, dependent on the condition of the digestive organs, and in which the pneumogastric nerve is especially involved. As the result of a cause which thus operates through the nervous system, dyspnœa ensues and organic lesions soon follow, and most frequently in the shape of pulmonary emphysema." All these theories are no doubt highly interesting, but in a curative point of view of little importance to the allopathic practitioner, whose treatment would be just the same whether the disease of which the cough is symptomatic consisted in emphysema, thickness of the membrane, dilatation of the air-cells, or nervous derangement. It is, however, of the utmost importance to the homœopathic practitioner to ascertain the *fons et origo* of this cough, which I shall now endeavor to explain.

In my opinion not only the cough but all the attending phenomena depend upon loss of power in the nerves furnished to the lungs by the anterior and posterior pulmonary plexuses; and on a similar derangement in the gastric branches of the par vagum must depend those symptoms of indigestion which are so frequent an accompaniment of the disease. This loss of power in the branches supplied by the pulmonary plexus, which are nearly all ganglionic, produces a degeneration and loss of power not only in the muscular coat of the bronchial tubes, but also in the elastic tissue of the lung, upon a healthy state of which principally depends the act of expiration. In consequence of this want of elasticity in the pulmonary tissue the cells became unnaturally dilated, and this dilatation, or impurity of unchanged air, produces the short single cough, rendered feeble by the loss of power in the phrenic nerves and in the muscular tissues clothing the respiratory tubes. As these are unstriped muscles it is clear that the ganglionic system is at fault, and to it, not to the pneumogastric nerve (as taught by Professor Gamgee), must we turn our attention and apply our curative agents. This theory of loss of nerve power and elasticity will acount for the double expiration, not only in those cases in which emphysema exists, but also in those cases in which no such lesion has taken place, for in both, the abdominal muscles are called on to assist by a supplementary effort the weakened pulmonary elastic tissue.

217. (8.) **The Consumptive Cough.**—This is very rarely met with in the horse, and may be diagnosed by absence of murmur in circumscribed spots or patches of one or both lungs, bronchial respiration, and cavernous or spumous râles. This cough denotes tubercles in the lungs, which usually terminate in glanders.

218. (9.) **The Chronic Cough.**—This is so named from its lasting for months or years without appearing to injure the animal's health; may be an effect of previous disease in some part of the respiratory organs, or it may be idiopathic, when its origin must be ascribed to nervous derangement.

There are three kinds of chronic cough, namely:

1. The hollow, groaning cough.
2. The loud, dry, spasmodic cough.
3. The short, hacking, feeble, grunting cough.

The first, or hollow cough, which seems to come from the inmost recesses of the body, is preceded by a groan, or made up of half groan, half cough. It comes on early in the morning or at night, and does not interfere with the general health for a very long time. Auscultation sometimes fails to detect the seat of this cough, when I conclude that it arises from some derangement in the pulmonary and gastric branches of the par vagum. More frequently, however, it depends upon consolidation of a portion of the lung, which may be diagnosed by the absence of murmur, and dulness on percussion over the hepatized portion.

The second, or spasmodic cough, seems to me to depend upon some derangement in the recurrent nerve, or on an irritable state of the membrane lining the larynx. It is generally heard when the horse is eating, drinking, or first brought out of the stable.

The third, or grunting cough, is similar to the broken-winded one, but unattended by the jerking movement of the flanks or any emphysema. The pathology of this cough only differs from that of broken wind insomuch as the elasticity of the lung is concerned; for in this case the pulmonary tissue does not appear to be affected at first, although it eventually becomes so, and then the animal is broken-winded.

But the organic nervous system supplying the lining membrane and also the diaphragm is equally depressed, and as a natural consequence we find an alteration in the bronchial secretion, or some deposition of lymph in the air-passages, giving rise to a cough which is short, feeble, and devoid of resonance, owing chiefly to loss of power in the phrenic nerves. A strong forcible expiration or cough requires a sudden inspiration, which cannot well take place if the diaphragm is out of order. This has been confirmed by Girard and other veterinary surgeons, who observed a cough similar to the one under consideration in horses that they afterwards found had sustained a lesion of the diaphragm.

219. Remedies for Cough.—Aconitum napellus. Aconite may be used in the primary stages of all inflammatory coughs, whether seated in the mucous membrane or pulmonary tissue. Its principal indication in the former is dryness of the membrane. In the latter, increased and full or strong pulse, with dyspnœa and other indications already given in the diagnostic symptoms of pulmonary coughs. The Aconite cough is short, dry, frequent, and generally spasmodic. As soon as the inflammatory symptoms subside, which is denoted by increased mucous or muco-purulent secretion, the Aconite should be either discontinued or given in alternation with the drug specifically adapted to the nature and seat of cough under treatment.

In human medicine this drug holds a high position as a remedy for coughs, but, according to my experience, it can only be regarded as a useful auxiliary in veterinary practice. From its extensive range of action, Aconite may be useful in those recent, hard, dry coughs, whose seat it may be difficult to diagnose.

Aconite will be indispensable in the first or inflammatory stage of bronchitis, of pleurisy, and of pneumonia, which are characterized by hardness of the pulse, chilliness, and high fever. In the last-named disorder it will be indicated by the pulse being quickened and full, the breathing labored and panting, the mouth hot and dry, and the membranes of the eye and nose injected.

Dose.—Ten drops may be thoroughly mixed in a pint of water; of this two tablespoonfuls may be given to the larger animals, one to the medium-sized, as the sheep, the goat; and one or two teaspoonfuls to the smaller domestic patients; the dose to be repeated once in one, two, three, or four hours, according to the severity of the symptoms; diminishing the frequency of repetition as the case improves.

Apis mellifica.—Apis acts especially on the lining membrane of the larynx, and seems to control a state of inflammation in it even greater than that to which Belladonna is applicable—one in which I infer from the symptoms that submucous infiltration has taken place. The cough is suffocative, painful, and not so hard as the Belladonna cough; but there is usually more dyspnœa, which leads me to diagnose a thickening of the membrane, probably from effusion, which Apis speedily removes. It has also, in my hands, quickly removed a painful, hoarse cough, accompanied by a clear, ropy discharge from the mouth, similar to the symptoms indicating Mercurius, which appears to me to be its chief analogue as far as the action of both on the larynx is concerned. Apis has also been used by me, with considerable success, in some cases to which Belladonna appeared to be homœopathic, but yet failed in removing the cough.

Dose.—See Aconite.

Arsenicum album.—This drug acts on the mucous membrane lining the whole of the respiratory tract. It is chiefly indicated in those coughs which remain after influenza or catarrh of an asthenic type, accompanied by an unhealthy appearance of the coat. The cough is usually dry, but with watery discharge from the nostrils, and excited by exposure to cold air or drinking cold water. It would seem to be dependent on loss of power in the organic nervous system, giving rise to a thin, acrid secretion from the respiratory mucous membrane, to cure which it only requires that the vaso-motor system be raised to a healthy standard by the action of Arsenicum. On referring to my pathology of "broken wind,"—see No. 216, p. 262,—the reader will understand why Arsenicum has been so successful in the hands of M. Hew, of Chaumont, in curing this disease. This gentleman has lately published a report of ten cases of broken wind cured by Arsenicum. He gave it to the extent of fifteen grains daily, and at the end of a fortnight not only the cough but all other symptoms had disappeared. Chronic cough with thick wind is also one for which Arsenicum is peculiarly suitable; but in these cases I would recommend the Liquor Arsenicalis in thirty-drop doses.

In pneumonia, Arsenicum will be indicated in extreme cases when there are: great depression; weak pulse; cold, clammy mouth; purging, and entire absence of appetite; cough worse at night (after midnight), on going up a hill, and especially when attended with difficulty of breathing. This is the principal remedy for *heaves* or broken wind, as above stated.

Dose.—Same as directed for Aconite, but repeated only half as often.

Belladonna.—The chief sphere of action of this drug, as a cough medicine, is the upper portion of the air-passages, including the pharynx, fauces, and larynx, as well as the neighboring glands. I have never witnessed any beneficial effects from Belladonna in bronchial coughs of a sthenic character, but in those low, feeble, painful coughs having their seats in the bronchial membrane, and accompanied by fever of an asthenic type, I have used Belladonna in alternation with Bryonia most successfully.

Belladonna has proved remarkably successful in the dry cough of the late epizootic; it is indispensable in pneumonia, and here, as in the epizootic, it may be given in alternation with Phosphorus to great advantage.

Dose.—Similar to Aconite, but not so often repeated.

Bryonia.—Bryony is a very valuable cough medicine, but the state for which it is applicable has not, according to my experience, been so well explained by any author as by Dr. Hughes, in his *Pharmacodynamics.* Its sphere of action as regards coughs is the larynx, trachea, and large bronchi, but it has little or no effect on a cough having its seat in the small tubes. It does not appear to me to be applicable to an active state of inflammation, but to irritability, producing "continued, dry cough, especially early in the morning." The Bryony cough, although dry, is usually accompanied by a rattle in the throat or some part of the trachea. This rattle is not such as ordinary mucus would produce, but conveys the idea that plastic lymph has been thrown out, or mucus of a tenacious character. Pressure on the part of the trachea where this râle is heard immediately produces the cough, as does also exposure to cold air or exercise. In those coughs which prove a sequel to some active disease in the air-passages which has left the membrane in an irritable state, giving rise to cough when the horse is first brought out of the stable, Bryony will be found a most useful remedy; but when any soreness of the throat is present it must yield in value to Belladonna. Bryonia is required in pleurisy where it will be indicated by the aggravation on motion and tenderness on pressing upon the flanks, and by a full and moderately hard pulse. Short and restrained cough, as if it were painful, and the breathing short and catching, will especially call for this remedy in pleurisy. In bronchitis, Bryonia will be indicated by loud rattling from the first, heard when the ear is applied to the breast or side; cough is loose and attended with discharge of frothy phlegm; the respiration is quick, difficult; there is rattling of mucus in the windpipe, in the air-tubes (bronchia), and in the lungs; or the cough may be frequent, dry, irritating (Aconite may here be preferred); there is a discharge of thick phlegm. Aconite and Bryonia have been advised to be given in alternation in the earlier stages of this disorder.

Dose.—Six to ten drops, once in two or three hours, in the most urgent cases (*e. g.*, of pleurisy); usually to be prepared as directed for Aconite; repeated once in two or three hours.

Iodium, Iodine.—I have found the Tincture of Iodine useful both for laryngeal and tracheal coughs, attended by an effusion from the membrane of a plastic nature, as well as in those cases dependent on chronic inflammation of the membrane, and accompanied by an unhealthy discharge from one or both nostrils. In its action on the laryngeal and tracheal membrane it resembles Bryony, but differs from the latter in its affinity for the salivary glands. When the cough depends upon an irritable, not inflammatory state of the salivary glands, or of the mucous follicles in the laryngeal and tracheal membrane, whereby these secretions are changed from their normal character, I believe Iodine will be found superior to Mercurius, Bromine, or Spongia, but often inferior to Arsenicum, which appears to be its chief analogue.

Dose.—As directed for Aconite, repeated once in three or four hours.

Mercurius.—The mercurial preparations act on the mucous membrane lining the air-passages, but principally on the laryngeal portion, and also on the salivary glands. I have very little faith in Mercurius as a remedy for bronchial coughs, either acute or chronic, and feel convinced that if those authors who recommend it for chronic bronchitis would substitute Antimonium tartaricum, either in trituration or dilution, they would find the latter a far superior remedy, especially in those cases where the tubes are filled with mucus. The cough requiring Mercurius is dependent on the secondary stage of inflammation in the pharyngo-laryngeal region and neighboring glands, and its use is indicated by increased secretion, nasal discharge, and sore throat.

Nux vomica.—Tinct. nucis is principally indicated in coughs of a nervous and spasmodic character, which some horses have early in the morning and at night, but without deranging the general health, and often without any pathognomonic symptom whereby its seat can be accurately determined. This chronic cough appears to me to depend upon some derangement in the pneumogastric nerve. Sometimes the recurrent is the branch most affected, sometimes the pulmonary branches, but occasionally the gastric, when we have what is called a stomach cough. The acute symptomatic cough for which Nux is applicable is attended by constipation or a slimy state of the fecal balls, foul tongue, or a peculiar white appearance of its dorsum, and probably yellowness of the buccal membrane, and sometimes by that state of the skin called "hide-bound." A most remarkable indication for Nux vomica in cough is found in *breaking wind* simultaneously with the cough. This we have observed on several occasions, in which Nux never failed to cure. In coughs attended with a disposition to heaves, and where the animal immediately begins to cough on being made to trot, Nux will be found invaluable. Coughs worse on going down hill, especially trotting, which seems to irritate the bronchia by a sort of downward mechanical pressure, compare Ammo. mur.

Dr. James Moore, whose cough indications we have freely quoted, gives the following indications for Nux vomica: dry, hoarse, spasmodic cough, worse in the morning, and after eating and exercise, and especially when the stomach is disordered, the tongue furred, the mouth foul, the appetite variable, the bowels confined.

Dose.—As directed for Aconite, repeated once in three or four hours.

Phosphorus.—This is the best medicine for pulmonary coughs of a febrile or inflammatory character, whether such cough has its seat in the small bronchi or substance of the lung. It is also useful for chronic cough arising from some organic change in the pulmonary tissue. The Phosphorus cough is dry, short, and frequent, or what is termed a "racking" cough. Human surgeons recommend this drug for laryngeal cough, but I cannot indorse this recommendation in veterinary practice. Necessary in pneumonia, especially in the second stage, when the lung is solidified, a condition which may be ascertained by observing the physical signs, of dulness on auscultation. And when the breathing is very labored and distressed, and when a reddish or yellowish discharge is coughed up.

Dose.—As directed for Aconite, to be repeated once in four hours.

Rumex crispus.—This drug, whose specific action on man is confined to the laryngo-pharyngeal region, in the horse has an equally powerful effect on the bronchial membrane.

The laryngeal cough which Rumex removes is dependent on an irritable (not inflammatory) state of the membrane, either idiopathic from the commencement or the result of previous inflammation which has been removed by other means. In consequence of the absence generally of objective symptoms, and the horse being unable to give us the subjective ones, it requires a great deal of practical knowledge to decide on the seat and class of cough for which Rumex is suitable; but once correctly diagnosed, the remedy acts like magic.

There is no sore throat, bronchitis, or any marked constitutional derangement, and seldom any abnormal râle, yet the horse coughs frequently, especially on the slightest exertion.

Sometimes a sibilant or mucous râle may be heard, but more frequently the respiration is merely harsh, as though the membrane was deficient in secretion. It is, in fact, an idiopathic cough whose seat it is difficult, and often impossible, to determine; but of this the reader may be assured that if Rumex be the appropriate remedy, its action will be apparent in two or three days.

Dose.—As directed for Aconite.

So far Dr. Lord, except the directions for the dose; but there are still certain remedies, of less frequent occurrence perhaps, but still needed in the various disorders of domestic animals, whose titles are placed at the head of this section, disorders of which cough forms one of the most prominent and easily distinguished symptom.

Arnica will be required in pleurisy resulting from external injuries, to be followed by Aconite, Bryonia, or Rhus tox., according to the existing conditions.

Cannabis may be required in inflammations of bronchia, or in pneumonia, where the animal is obliged to stand up in order to breathe.

Carbo veg.—Frequent attacks of hollow-sounding, spasmodic cough, occurring only in the morning. It is also indicated for cough in the evening till midnight.

China.—Cough at night, worse after midnight, difficult breathing, with debility, especially after hemorrhage from lungs (in human subjects).

Ammonium causticum.—Much languor from the first; coldness of the legs, ears, and nose; rough, staring coat; quickened, difficult breathing; pulse small, weak, and frequent.

Sulphur will often be needed in pneumonia, and in pleurisy, when the acute symptoms have been removed by other remedies. It serves to prevent the cough from becoming chronic.

Dose.—Six or ten drops every morning.

Antimonium tartaricum (Tartar emetic) is indicated in bronchial cough when the secretion (and discharge) of mucus is very copious, the cough is loose, the rattling loud, the breathing much distressed.

Kali bichromicum is indicated when the phlegm is tough, sticky, stringy, in old-standing cases, and when the tongue is covered with yellow fur.

Drosera.—Spasmodic, or chronic cough, hoarse, hollow-sounding.

Spongia.—Sharp, shrill, ringing cough, tracheal inflammation, or dry, hollow, barking cough, sounding like croup or like whooping-cough in the human subject.

Ipecacuanha.—Quick, anxious, sighing breathing, suffocating attacks, frequent dry cough, suffocating cough, loose cough, rattling in bronchia, violent racking cough. Particularly recommended for sheep.

Belladonna, *Carbo veg.*, *Drosera*, *Hepar*, *Hyoscyamus*, *Ipecacuanha*, and *Veratrum* have been recommended for the spasmodic cough of dogs.

For the dose of these remedies see Aconite; they must be repeated according to circumstances.

220. Pleuro-Pneumonia in Horses.—The following account of the pleuro-pneumonia in horses we extract from Colonel Fitzwygram's "Horses and Stables," before referred to.

Pleuro-pneumonia is inflammation affecting both the lungs and pleuræ. The disease may attack one lung or one portion of one lung, but it more often attacks both lungs at once. The pleuræ are generally involved to the same extent as the lungs. The position and extent of the disease must be ascertained by auscultation. The causes of pleuro-pneumonia are the same as those of other diseases of the respiratory system.

The symptoms in the early stage are those of pneumonia with the addition of the friction-sound and elevated ridge across the cartilages of the ribs, which are to be noted as characteristics of pleuritis. The pulse is more affected than in pneumonia, and less so than in pleurisy, and may probably range about 70.

In the second or moist and in the later stages the symptoms are also similar to those which have been already detailed under the head of pneumonia and pleurisy, and are in fact, as we might expect, a combination of both. Thus whereas in pleurisy the effusion or exudation is poured out into the cavity of the chest, and in pneumonia the substance of the lungs is affected by the out-poured fluid, in pleuro-pneumonia both results may ensue.

A peculiar low form of pleuro-pneumonia often prevails as an epizootic in large towns, the early symptoms of which are very obscure. The animal merely shows dulness and loss of appetite and increased frequency of pulse. The respiratory movements are at first so little affected, that unless the practitioner is on his guard and tests the state of the lungs by auscultation, the disease may gain a head before its real nature is suspected.

Some cases, however, in spite of all our care will terminate unfavorably, and we shall then have to deal with those results which have been mentioned above, namely, effusion or water on the chest; exudation of lymph causing either condensation of the connecting tissue of the lungs and also of the air-cells, or extensive adhesion of the pleura of the ribs to the pleura of the lungs; or more rarely suppuration and the formation of abscesses; or sometimes gangrene and mortification of the parts attacked.

When effusion takes place from the overloaded vessels, the acute symptoms are at first greatly diminished, and the inexperienced may be led to think that the patient is going to recover. Warmth returns to the extremities, the pulse though still quick is less frequent and it becomes soft, the appetite partially returns, and the general appearance indicates that the acute pain has subsided. The fact is, that the tension is taken off the coats of the bloodvessels by reason of the effusion; and thus for a time, until the water occupies some considerable space in the chest, the breathing is not so much labored.

As soon, however, as that result takes place, the breathing becomes more labored and the difficulty increases with the increasing amount of the effusion. The degree to which the water has formed, may be ascertained by careful auscultation, as no respiratory sounds will be heard from that part of the lungs which is surrounded by water; whilst above that point, the usual sound will be plainly perceptible.

From the commencement of the effusion, although many of the urgent symptoms at first subside, yet others remain throughout, which distinctly negative the idea of a real recovery. The pulse is still quick and wiry, the breathing quick in number although at first less labored, the extremities, which had temporarily regained their warmth, again become cold, the coat is harsh and dry, and there is a want of pliability in the skin. The most marked feature, however, consists in the patient still standing persistently with his fore legs wide apart.

As soon as the effusion has taken place to any considerable extent, there will be in most cases a dropsical swelling between the fore legs under the sternum, and the ridge along the abdomen will become more and more distinct, and a straw-colored serous discharge will be seen from time to time to trickle from the nostrils. The expiration also will be more markedly performed by a double action; *i. e.*, the abdominal muscles will be brought into play to assist in the expiration of the air. As the weakness increases, the hair of the mane and tail will become very loose, and may be easily detached.

All sound of the percolation of the air necessarily ceases below the point to which the serum or water has risen. In some cases the distended vessels continue to pour out serum until it has risen in the pleural cavities to such an extent as to cause death from suffocation. The water may indeed be drawn off through a tube inserted into the chest, and temporary relief will be gained; but in most cases it quickly reforms. The practice has latterly got into disuse for the above reason.

All cases of effusion do not, however, terminate thus unfavorably The effusion may be only slight, and in such cases the lower part only of the lungs is pressed upon, whilst sufficient remains for respiration. Nature then by means of the absorbents and bloodvessels takes up the whole or part of the effusion. Any consolidated deposit that may remain, will necessarily more or less impede the freedom of respiration.

The degree in which nature takes up the effusion, is principally dependent on the tone of the vital powers after the acute attack has passed away. If those powers have been weakened by depletive treatment, by blisters and such like remedies, or by neglect, nature may probably be unable to take up the deposit. But if, on the other hand, by judicious management, good nursing, attention to the appetite, and by the absence of violent remedies, those powers have been husbanded and assisted, there is reason to hope that nature may be able to absorb all the effusion and deposit. In these cases, however, her powers will require to be assisted by very careful and well-directed after-treatment.

If the attack terminates in exudation, the lymph may be deposited either between the lungs and the sides of the cavity of the chest, or in the lungs, or it may affect both parts. Lymph as previously stated is adhesive in its nature, and has a marked tendency to become consolidated and organized.

In virtue of this property if, as in pleuritis, it is deposited between the pleura of the lungs and the pleura of the ribs, it has, when suffered to remain, a tendency to cause the one part to adhere to the other. This result is known as adhesion. If the adhesion of the lungs to the ribs affects a large surface, their free motion and expansion is necessarily interfered with, and the horse must ever after be unsound in wind and unfit for fast work.

If, as in pure pneumonia, the lymph is exuded into the lungs, it will, if it becomes organized, consolidate and choke up a portion at least of the air-cells and passages, and render the animal unsound. Lymph may be exuded even to such an extent as to cause suffocation.

In pleuro-pneumonia the exudation may take place either into the substance of the lungs, consolidating their structure and causing them to become hepatized; or between the pleura of the lungs and ribs; or it may affect both structures.

In severe cases of bronchitis lymph is sometimes exuded and deposited in the bronchial tubes; and if it becomes organized, it will produce diminution of those channels and the wind will be affected.

In all the above cases the degree of permanent mischief will depend on the length of time which the lymph remains in the structures affected rather than on the amount of the deposit. If the vital powers, on the termination of the acute attack, are unable to take up and absorb the lymph, it will become consolidated, and will produce the mischievous effects detailed above. If, on the other hand, by judicious treatment and nursing nature is given a fair chance, she will in favorable cases take up the whole or a large portion of the lymph exuded. With a view of stimulating the action of the absorbents five-drop doses of the mother tincture of Bryonia may be given with benefit three times a day.

In some cases, where the attack, whether arising from pneumonia or pleuro-pneumonia, has been very intense, and especially where in addition the patient has been unduly lowered, suppuration may take place and abscesses will form in the lungs. The presence of an abscess, as soon as it has opened into a bronchial tube, may be detected by those experienced in auscultation on the application of the ear to the chest, either by a rushing sound as the air rushes into the hollow space, or by the absence of any sound of percolation of air through the part, when the abscess, as is often the case, is filled with matter. Even beyond the parts immediately affected and in fact destroyed by the abscesses, it is more than probable that the whole structure of the lungs must be more or less disorganized by the violence of an attack sufficient to induce suppuration.

The formation of abscesses is, however, more easily known by fetor of the breath and by the animal coughing up muco-purulent matter.

Gangrene or mortification may occur in any part of the structures, which have been subjected to disease. It is, in plain language, death of the part, and the result is invariably fatal.

These indications for the treatment, and the medicines themselves, are very similar, in simple pneumonia, and in pleuro-pneumonia, only that Bryonia replaces, in the latter, the Belladonna so useful in the former.

Treatment.—Place the animal in a well-ventilated box, and let plenty of air in. In the horse, put on warm clothing; hand-rub and bandage the legs; and give small quantities frequently of whatever food he will eat.

The following are the best remedies:

Ammonium causticum in those cases which begin with languor; coldness of the legs, ears, and nose; rough, staring coat; quickened, difficult breathing; pulse small, weak, and frequent.

Aconite is indicated when febrile reaction comes on—the pulse being quickened and full; the breathing labored and panting; the mouth hot and dry; the membranes of the eye and nose injected.

Bryonia is especially required, often in alternation with *Aconite*, when there are symptoms of bronchitis, such as loud rattling from the first in the air-tube, heard when the ear is applied to the breast or side; the cough loose and attended with discharge of frothy phlegm, &c.

Phosphorus is of the greatest value in this disease, especially in the second stage when the lung is solidified—a condition which can be ascertained by detecting special physical signs. Also, when the breathing is very labored and distressed, and when a reddish or yellowish discharge is coughed up.

Arsenicum is often of service in extreme cases, when there are: great depression; weak pulse; cold, clammy mouth; purging; no appetite.

Dose.—Ten drops for horses, six for sheep, and four for dogs, to be mixed, each, in one pint of water and given in two tablespoonfuls, or teaspoonful doses, as required.

Sulphur is always given by Dr. Moore, as soon as the acute symptoms have yielded, with a view to complete the cure, and prevent tendency to relapse.

Dose.—Ten drops three times a day.

221. Pleuro-pneumonia in Cattle.—From Gamgee's *Dairy Stock*, we take the following concise statement of the symptoms of epidemic pleuro-pneumonia in cattle: "From the time that an animal is exposed to the contagion to the first manifestation of the symptoms, a certain period elapses; this is the period of incubation. It varies from a fortnight to forty days. Some faith may be relied on reports of even longer periods of incubation. The first signs, proving that the animal has been seized, can scarcely be detected by any but a professional man; though, if a proprietor of cattle were extremely careful, and had painstaking individuals about his stock, he would invariably notice a slight shiver usher in the disorder, which for several days, even after the shivering fit, would limit itself to slight interference with breathing, detected readily on auscultation. Perhaps a cough might be noticed, and the appetite and milk secretion also diminish. The animal becomes costive and the shivering fits recur. The cough becomes more constant and oppressive, the pulse full and frequent, usually numbering about 80 per minute at first, and rising to upwards of 100. The temperature of the body rises, and all the symptoms of acute fever set in. A moan or grunt, in the early part of the disease, indicates a dangerous attack, and the alæ nasi, or nasal cartilages, rise spasmodically at each inspiration; the air rushes through the inflamed windpipe and bronchial tubes, so as to produce a loud, coarse respiratory murmur; and the spasmodic action of the abdominal muscles indicates the difficulty the animal experiences also in the act of expiration. Pressure over the intercostal spaces and pressing on the spine, induce the pain so characteristic of pleurisy, and a deep moan not unfrequently follows such an experiment. The eyes are bloodshot, the mouth clammy, skin dry and tightly bound to the subcutaneous textures, and the urine is scanty and high-colored.

"On auscultation, the characteristic, dry, sonorous râle of ordinary bronchitis may be detected along the windpipe and in the bronchial tubes. A loud sound of this description is, not unfrequently, detected at the anterior part of either side of the chest, whilst the respiratory murmur is entirely lost posteriorly, from consolidation of the lung. A decided leathery friction-sound is detected over a considerable portion of the thoracic surface. As the disease advances, and gangrene, with the production of cavities in the lungs, ensues, loud cavernous râles are heard, which are more or less circumscribed, occasionally attended by a decided metallic noise. When one lung alone is affected, the morbid sounds are confined to one side, and on the healthy side the respiratory murmur is uniformly louder all over.

"By carefully auscultating diseased cows from day to day, interesting changes can be discovered during the animal's lifetime. Frequently the abnormal sounds indicate progressive destruction; but at other times portions of lung that have been totally impervious to air, become the seat of sibilant râles, and gradually a healthy respiratory murmur proves that, by absorption of the materials that have been plugging the lung-tissue, resolution is fast advancing. I have seen some very remarkable cases of this description.

"Unfortunately we often find a rapid destruction of lung-tissue, and speedy dissolution. In other instances the general symptoms of hectic or consumption attend lingering cases, in which the temperature of the body becomes low; the animal has a dainty appetite, or refuses all nourishment. It has a discharge from the eyes, and a fetid sanious discharge from the nose. Not unfrequently it coughs up disorganized lung-tissue and putrid pus. Great prostration, and indeed, typhous symptoms set in. There is a fetid diarrhœa, and the animal sinks in the most emaciated state, often dying from suffocation, in consequence of the complete destruction of the respiratory structures."

The following symptoms are given by Dr. James Moore as the characteristics of the malady which are of most frequent occurrence.

In the First Stage.—It begins in one of three ways: Firstly, it may attack the cow suddenly, and run a rapid course in spite of all treatment; secondly, it may come on slowly and insidiously, the cow appearing to be not very ill, whilst the lungs are becoming diseased beyond the hope of restoration; and thirdly, it sometimes begins with violent purging, followed by great weakness and loss of flesh.

The majority of cases, however, present the following symptoms: a short, dry, husky cough, which is heard only occasionally; it is highly characteristic of this disease, and when once heard cannot be mistaken again. The owner says, perhaps, that he has heard this "hoose" for two or three days, but thought no more about it. On inquiry, it will be found that the beast does not give so much milk as usual, and that it has a slightly yellowish tinge; the appetite is not much worse, yet still she is careless about her food, and does not lick her dish clean; when at rest, the breathing may not show any departure from its healthy play, but when the animal is moved and walked some distance, it becomes more frequent, labored, and difficult; the pulse is often healthy in character, although sometimes it is weak, and slightly increased in frequency; the bowels may either be confined or purged, or quite regular; the body is sometimes hot, sometimes cold. The cow appears dull and listless; when at grass she separates herself from the others, and lies on the ground whilst they are browsing.

In the Second Stage.—The cough is now more frequent, and thick, frothy phlegm dribbles from the mouth; the breathing is short when the air is taken into the lungs, and long when it is pressed out of them; the inward breathing is attended with much pain, which causes the animal to grunt and to grate her teeth; the grunt is heard when the animal is pressing the air out from the lungs; the pain is much increased by coughing and change of position, and to lessen it the cough is now suppressed, or held back and short, and the cow stands fixed in one place. The pain is owing to the pleura being inflamed, and the position of the diseased place may be ascertained by pressing the side between the ribs with the point of the thumb; when pressed on the animal will flinch and grunt. The pulse is quickened and oppressed; the skin is hard, tight, and bound to the ribs; the horns are hotter and the muzzle drier than usual; the head is lowered and thrust forward, with the nose poked out; the back is raised up; little or no food is eaten; the cud is seldom or never chewed; the milk is stopped; the bowels are bound, and, when moved, the dung is in hard, dry lumps.

In the Third Stage.—The breathing is much quickened, very difficult, labored, and even gasping; the breathing is carried on partly through the mouth, partly through the nostrils; the breath has a bad smell; a stringy, frothy fluid constantly dribbles from the mouth; the cow groans loudly and frequently, whilst the grunt is either gone or subdued; the pulse is quick, weak, and in some cases imperceptible or intermittent; the horns, ears, and legs are cold, the skin covered with cold sweat, the head and neck stretched out, with the nose poked into the corner of the manger; the fore legs are separated from one another and fixed in one place, unless the cow is restless and uneasy; sometimes the hind ones are crossed over each other, or the hind fetlock-joints are knuckled forward; the stoppage of milk is complete; the animal is reduced to a skeleton; the strength is also, of course, greatly impaired, and the beast can scarcely cough; insensibility sometimes steals over her; the urine is very high-colored; towards the last, violent purging comes on, the discharged matter being quite watery, blackish, highly offensive, and sometimes mixed with blood; eventually, the cavity of the chest becomes so full of fluid, or so much of the lung is condensed, that the breathing, from being more and more difficult and frequent, at last ceases, and the animal is dead.

222. Treatment.—It is of the utmost importance that this should be begun at the earliest possible moment. The sooner the medicines are given after the first symptoms of the malady begin to make their appearance, the more promptly and certainly may the disorder be removed.

Aconite.—Pulse hard and quickened; breathing short, painful, anxious, attended with groans and open mouth; shivering or trembling, attended with coldness of the legs and horns, and dry heat of the skin.

Dose.—Ten drops in a little water every hour, or two hours, according to the violence of the symptoms.

Bryonia.—Frequent, short, suppressed cough, which conveys to a looker-on the idea that the action of coughing causes a sharp pain in the chest, and the cow tries to lessen this by stopping or cutting short the effort of coughing. For the same reason the breathing is short, attended with pain and the characteristic grunt; pain, followed by flinching and grunt when the ribs are pressed against; the animal remains standing in one place, and is unwilling to move, because the pain in the chest is thereby increased.

Dose.—Ten drops every two or three hours.

It frequently happens that the cow presents all the symptoms which are included under the last two medicines, in which case *both* are to be chosen and given every one, two, three, or four hours, not mixed, but time about, or in turns—that is, first one, then the other, one, two, or three hours after—then the first again, and so on, according to the violence of the symptoms. The same remark applies to all the other remedies. The reader, then, is to remember this rule: *That in choosing any of the medicines, he must pick out those that correspond most nearly to the present symptoms of the cow.*

Ammonium causticum.—Quick, difficult breathing, attended with rattling sounds; the breathing inwards is short, in consequence of pain; cough frequent, and attended with discharge of phlegm from the windpipe; great weakness, listlessness, and depression; pulse feeble and quickened; frequent shivering or trembling; skin hot and dry, afterwards moist.

Dose.—Ten drops in a little water, every two hours, till improvement appears, then once in three hours only.

Lycopodium.—Fan-like motion of alæ nasi; from this symptom, Dr. Wilson cured many cases with this remedy.

Arsenicum is the most suitable when there are wheezing, short, hurried, and difficult breathing; small, quick pulse; great weakness and loss of appetite; grinding of the teeth; cold skin and clammy sweats; frequent short cough; purging either in the first or last stage; then *Arsenicum* is the most suitable, and must be given as follows:

Dose.—Ten drops every two or three hours.

If the following symptoms exist—breathing difficult, oppressed, and obstructed; pains in the chest, which are aggravated by taking a deep breath, by moving about, and by coughing; pain between the ribs; frequent short cough, attended frequently with discharge of slimy phlegm, which is sometimes mixed with blood; violent purging, followed by wasting and weakness; then *Phosphorus* is required, and must be given as directed for the last medicine.

Sulphur exerts its beneficial action in this complaint, more especially when one or other of the foregoing remedies have subdued the more violent symptoms, and when the cow is slowly recovering. Its chief effect seems to be to confirm the tendency towards health, and to guard against a relapse. It is to be given as follows:

Dose.—Ten drops in a wineglassful of water three times a day.

Diet.—The food should consist of bran mashes, boiled turnips, and carrots, oat-meal or corn-meal gruel. Healthy cows should be removed from the vicinity of those that are sick. The latter should be housed in dry, well-ventilated, and comfortable stables, and every care should be observed, by giving little food at a time, to prevent a fatal relapse after convalescence has been well established; for if the stomach is filled with food, the disease is very apt to return, and death is then the usual consequence.

By the aid of these homœopathic medicines, Dr. Moore and other British veterinarians saved a very large portion of their cases in an epidemic of pleuro-pneumonia so destructive that *nearly all* (36 out of 37) died under the ordinary treatment.

223. Typhoid Pneumonia.—Dr. James Moore cured with ten drops of Phosphorus, three times a day (followed after nine or ten days with Sulphur^6, ten drops three times a day), a case of typhoid pneumonia with the following symptoms: The horse, an aged one, had been allopathically treated for seven or eight weeks, and was pronounced incurable; pulse 73, weak and small; respiration 36, quick and short; the cough is painful, cavernous, and frequent; discharge from both nostrils copious, mucopurulent, and brownish; considerable expectoration from the mouth; the breath, sputum, and nasal discharge are horribly fetid, especially after the paroxysm of coughing; when the animal coughs, the head is held down to the ground, and the flanks heave; the eyes are dull and heavy; the appetite greatly impaired; the urine scanty; the bowels costive, and the evacuations offensive; the extremities are cold; the horse is exceedingly weak and in very low condition. On examining the lungs I found tubular breathing in inferior lobe of left side, loud râles in middle third, and subcrepitation in upper third; there were some scanty, indistinct rattles throughout the right lung. These last were finally removed by the Sulphur. This cure was a great triumph for homœopathy.

Bryonia it is likely will be needed in some such cases, in alternation with Phosphorus.

Arsenicum will be indicated by profound debility and exceeding putridity of the discharges; and the very symptoms for which Dr. Moore found Phosphorus curative will, in most cases, require Arsenicum instead.

224. Bleeding from the Lungs.—From violent exertion in running, or from external injuries, horses may sometimes bleed from the lungs. The blood flows from the nose and mouth. It is bright, red, frothy, and accompanied with cough, and there is usually great difficulty of breathing, and beating of the flanks. Sometimes, but rarely, it occurs from heart disease.

225. Treatment.—*Aconite* should be given at first, a dose of ten drops in a little water, placed on the tongue, every ten or fifteen minutes, to relieve the intense excitement of the pulmonary system. As soon as the animal is more quiet, give the medicine once in half an hour till the flow of blood ceases, the cough subsides, and the respiration becomes normal.

Arnica should be given in cases when the hæmoptysis comes from external injury of any kind; it may be given in a similar manner to that recommended for Aconite, but it may need to be less frequently repeated.

Hamamelis.—This remedy, so much used in hemorrhages of the human subject, may be given to horses instead of the former, when the discharge of blood is darker in color, and when it comes less rapidly.

Dose.—Twenty drops every half hour.

Bryonia may be given, four drops, three times a day, in a little water, in case some cough remain.

Sulphur should be administered in ten-drop doses every morning for three mornings, and then skip an equal number, and so on, where a tendency to hemorrhage from the lungs is often manifested, as the result of some tuberculous or other chronic weakness of the lungs themselves.

Bleeding from the lungs in other animals, if any such occur, may be treated in a similar manner; diminishing the dose to fit the smaller animals. See page 34.

226. Congestion of the Lungs.—Dr. James Moore gives the following account of this severe and dangerous disorder, and of a remarkable case cured by him:

"The sudden and severe engorgement of the lungs with blood so often met with in horses, and less frequently in dogs, is most frequently caused by a long run in hunting, or by any other severe and long-continued exertion. It also arises when a horse has been over-fatigued by a hard day's work, especially if he has been exposed to damp and cold. Under such circumstances this disease is very common amongst the horses of our large brewers, and railway and carrying companies. By the adoption of a more rational system of treatment than that of bleeding, blistering, and so on, many hundreds of pounds would be annually saved.

"The symptoms are beyond mistake. The patient's pulse is strong and full, and may count up to 100 per minute. The heart, on placing the ear to the side, is heard beating with unnatural agitation. The breathing is oppressed, labored, panting, and may count 50 or 60. The nostrils are widely dilated and work heavily. The eyes are staring, and anxiety and distress are written in the expression of the countenance. Sometimes blood flows from the nose in small quantity, or, if a vessel be ruptured, fatal bleeding may take place suddenly. The legs and ears are cold. These symptoms may end in death, or they may run on to the development of pneumonia, or bronchitis, or pleuro-pneumonia."

Treatment.—In simple congestion of the lungs I find the best remedy to be *Ammonium causticum*. The following is a case in point:

"On September 19th, 1857, I was requested to visit a valuable entire horse, the property of Mr. Walter Carter, of Manchester. He has recently come into the owner's possession, has been put to severe work, to which he has hitherto been unaccustomed, and on the 18th, was permitted to drink copiously of cold water, whilst perspiring and exhausted, after a hard day's labor. Shortly afterwards he had a rigor so violent that his legs tottered under him. Three hours after this shivering I found the following symptoms: Pulse strong, full, and 100 per minute; respiration labored, heaving, and 84 per minute; conjunctiva injected; eyes watery; mouth hot, and clammy to the touch; corrugations of the cutaneous muscles along the side and shoulder; general surface warm, the extremities cold, and the nasal membrane preternaturally vascular. To have *Ammonium causticum*', ten drops in a wineglassful of water every hour.

"On the following morning the pulse counted 28 in the minute, and intermitted occasionally; all the other symptoms had disappeared, and he ate, drank, dunged, and staled as if nothing had been amiss. At two o'clock of the same day the pulse had risen to the healthy standard, and had assumed the usual character,—in short, the horse was all right, and resumed work next morning."*

227. **Asthma.**—In dogs asthma sometimes appears as the consequence of high living, close confinement, want of exercise, and previous disorder of the lungs. This disease is characterized by fits of difficulty of breathing, coming on at intervals, often accompanied with a dry, harsh cough, worse from eating, moving, and from changes of temperature. Sudden attacks of difficulty of breathing coming on when the dog is apparently in health, and without indications of inflammation, may sustain the conclusion that the animal is suffering from asthma. The other symptoms may be found in the following indications for—

228. **Treatment.**—*Arsenicum*, which is indicated either in old or recent attacks, when the breathing is short and quick on exertion, or on going up an ascent, or after meals; when paroxysms of asthma come on, especially at night, are attended by panting, wheezing, and gasping for breath, and abate when a viscid mucus is coughed up; and when the breathing is worse on exposure to a cold or variable atmosphere.

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* British Journal of Homœopathy, vol. xvi, p. 353.

Ammonium causticum, which is a useful remedy when the respiration is quick, laborious, and suffocating, and attended with rattling of mucus, and a short, dry cough.

Ipecacuanha is indicated when paroxysms of suffocative difficulty of breathing take place during the night, and when the want of breath is urgent and distressing. Rattling of mucus in the chest, and tendency to vomit, are additional indications for this medicine.

Nux vomica is particularly suitable for those cases of asthma which are caused by, or occur in association with, derangement of the digestive organs, as evidenced by foul tongue and breath, impaired or depraved appetite, constipation, and piles; and is further indicated when the respiration is wheezing, and the abdominal muscles in full play.

Dose.—Six drops three times a day, or six drops may be mixed in a pint of water, and given in two tablespoonful doses every hour, or half hour, till relief appears. Regular exercise in favorable weather and light diet are indispensable to recovery.

229. Dropsy of the Chest—Hydrothorax.—In consequence of pleurisy, or from general debility and poverty of the blood, a collection of water sometimes occurs in the cavity of the chest. It may be suspected when, after subsidence of the acute symptoms of pleurisy, shortness of breathing and cough make their appearance, and the animal is in evident distress. The ear applied to the lower part of the chest on the affected side will discover an entire absence of respiratory murmur, while a little higher up the healthy sound may be plainly heard. As the disease advances the absence of the sound of the air in the lung is detected still higher up, more and more of the lower, dependent portion of the chest being occupied with the effused fluid. The breathing now becomes shorter and more difficult, the pulse is weak, the appetite is very poor, and dropsical swellings appear in other parts, as in the belly, the legs, and under the skin at the sheath in males. Dropsy of the chest is of rare occurrence in the horse. Sometimes in old animals, which have been poorly nourished, especially after previous sickness, dropsical accumulations form in the chest and abdomen, and the hinder legs swell enormously.

230. Dropsy of the Belly—Ascites.—In horses this is rare as an idiopathic affection, but not uncommon as a sequel of previous disorders. In cases of ascites from whatever cause, the urine is usually scanty, and costiveness is sometimes present. This gives place, as the disease advances, to diarrhœa of fetid stools. As the effusion increases in the serous membranes the belly becomes rounder, and on striking it a dull, tense sound is heard, the pulse and breathing are hurried, and fluctuation or actual movement of water in the abdomen may be detected by percussion. The legs and sheath become swollen.

231. Treatment of Ascites and Hydrothorax.—The following remedies may be studied in these cases, and six drops of one, or of two in alternation, given once in three or four hours, in a little water.

Arsenicum.—This is the principal remedy; it is indicated by difficulty of respiration, weak pulse, appetite poor, urine scanty, breast and legs swollen, emaciation, prostration. It is indispensable in hydrothorax or dropsy of the chest, and is especially indicated in ascites which follows asthma, or the disappearance of skin disease, or comes on in consequence of disorder of the liver.

China may be used either by itself, or in alternation with Arsenicum, in dropsy from debility, in old subjects particularly, and where pulmonary hemorrhage or hepatic disorders have preceded.

Digitalis.—Indicated by affections of the heart in complication with the dropsy, and by remarkable irregularity of the pulse, which is also feeble.

Mercurius may be required in cases of dropsy caused by disease of the liver, and where there is much fever.

Apis.—One of the most powerful remedies in dropsical affections. It is especially indicated by dropsy without thirst. Often useful in alternation with Arsenicum.

Helleborus and **Cantharis** have also been indicated in particular forms of these complaints. For the indications for these, and for further indications for the remedies already set down, consult the Materia Medica.

Dose.—Give of the selected medicine ten drops to horses, or six to dogs, once in four hours. Let the patients avoid violent exercise and exposure to cold.

CHAPTER V.

DISORDERS OF THE NERVOUS SYSTEM.

SECTION I.

THE RABID DISEASE.

232. Rabies.—In endeavoring to classify the diseases of animals, it has been part of our purpose to reduce them, as much as possible, systematically under organic heads; and the rabid disease, or rabies, which must not be confounded with phrenetic disease, or inflammation of the brain, has appeared to be more appropriately denominated as a disease incidental to the nervous system, than otherwise. In the consideration of this horrible complaint, we shall first consider it in relation to the dog,* from which, by inoculation, it is distributed amongst other species. The pathological investigation of this disease has, unfortunately, led to inconclusive results; and its true nature, and curative process (if, indeed, there be any which is invariably operative), are yet, consequently, involved in much obscurity. Some homœopathic experiments, however, have appeared to lead to something like a clue to its possible treatment. The progress of development, in respect of rabies, varies materially, the virus remaining apparently inert for a considerable period after inoculation has taken place. There is no instance on record, in which the disease broke out into active development, in less than twelve days (as regards the dog) after the accident, which was the cause of it, had occurred. Many cases occur, in which the disease declares itself at periods varying from forty to sixty days after inoculation, and from thence the inert condition of the virus may extend to seven months, before active symptoms set in. As regards the inoculation of other animals, the period between the seventieth day and the end of the seventh month, may be stated as the limits within which the disease will be developed (if at all). If seven months elapse, without active symptoms, it is generally considered that the inoculation has failed. Once declared, its course is very rapid, rarely exceeding five days in dogs, three days amongst human beings, six days amongst sheep, three days amongst horses, and eight days amongst cattle.

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* Cats, though more rarely, are also subject to the spontaneous induction of this frightful disease, which becomes still more fearful in them from the inordinate development of the more savage character of the feline species.

Causes.—The direct cause is doubtless inoculation (not mere contagion); whether there be any remoter atmospheric cause is problematical. The fact that rabies is more prevalent at a certain season, namely, the latter part of the summer quarter, proves little as to the primary origin of the disease, because this would only show, at the utmost, that heat, &c., would accelerate the disease, and by setting up an irritative and inflammatory action, would diffuse the latent poison. That it is more or less connected with intense sexual and hysterical excitement appears pretty clear. But if, in our climate, none of these causes be sufficient to engender it, it is clear that it might be exterminated, and this becomes an important public question.

Symptoms.—First of all the animal appears sullen and immovable, curling itself up closely, and tucking its muzzle downwards in front of the breast; it is listless, apparently in a half-drowsy state, and indifferent to the call of most customary voices. To this period succeeds that of intense restlessness, with continual changing of position, and moving anxiously from place to place; gathering up of litter, restlessly altering the disposition of the litter, or gathering it up in the mouth, and shaking it more or less violently; continually changing position, and assuming the most unnatural postures, or lying down on one side, getting up, circulating for a moment and then dropping down again; there is a gloomy sullen suspicious expression, and sometimes a direct stare; the dog appears to be watching and striking with its paws at imaginary flies (which exist only in a disordered sight); if spoken to, the animal is roused from this apparent delirium, and fawns about the person thus attracting its attention; but soon relapses into a momentary state of stupor, the eyes being closed, the fore feet appearing to quail, the muzzle, head, and even neck to hang listlessly down, &c., a condition which is once more followed by the appearance of darting at imaginary objects: sometimes the ears, which are (internally) but slightly red (and not swollen or ulcerated, as in canker) appear to occasion the most severe torture, judging from the repeated or continual effort made by the animal to rub or scratch them, and from the woful howl which accompanies this operation; in its violent and frantic endeavor to modify the suffering occasioned by this characteristic irritation of the ears, the animal rolls upon itself, and performs repeated and complete revolutions; sometimes, also, in the early stage of the disease, the strong affection of the animal for those whom it is accustomed to sport or to associate with, is greatly increased, and it fawns most obsequiously about its patrons; sometimes, also, in the earlier stage of rabies, the mouth is constantly open, and the tongue hangs out, symptoms occasioned by incapacitation of the muscles of the jaws and of the tongue; the appetite becomes morbid and unnatural, the ordinary food is avoided with apparent abhorrence, or it is eagerly seized, and as suddenly dropped, mastication having become impossible, owing to the symptoms just mentioned as characterizing the jaws; or if vomiting occurs, it is succeeded by an unnatural and ravenous pursuit of filth, or by the eager gathering up of the most unnatural substances, such as straw or excrement of any kind (not merely such as are sought out by puppies during the progress of dentition); there is foam at the mouth, but this is a symptom of short duration, and quickly succeeded by a more adhesive kind of phlegm, wherewith the lips and jaws seem to cling together, and which is collected at the corners of the mouth rather in the character of tenacious phlegm than of foam (as in epilepsy); the sounds emitted by the animal consist of a perfect, short, and unnatural bark, succeeded by the characteristic howl; the animal makes repeated efforts to dislodge the accumulating and adhesive phlegm from the corners of the mouth, for which purpose it strikes furiously at the sides of the mouth with its paws, subsequently reeling and rolling over; next comes intense and insatiable thirst, the animal lapping with eagerness, if the paralytic affection of the jaws has not supervened; or diving deeply and eagerly with the muzzle into the water, if, owing to the incapacitation of the jaws and tongue, it is unable to drink in the natural way; in the latter case, all power of deglutition* has generally ceased, and the animal will expel through the nostrils whatever fluid it has attempted to imbibe through the mouth. A rough internal bark with a peculiar shrillness of sound then succeeds, without the characteristic howl; or again after a few such successive barks the unmistakable howl will ensue; utter paralysis of the hind quarters supervenes, the animal being unable to raise itself on its hind legs, and sitting on its haunches; the eye is first of a peculiar, vivid brightness, but to this also there speedily succeeds a dull inanimate appearance, the conjunctiva becomes yellow and greenish, and the eye generally clouded, and afterwards affected with gangrenous ulceration, if at large, the animal rushes onwards, apparently wandering, without any other purpose but that of destruction, assailing and biting everything which falls into its way; after which it will usually subside exhausted (the mouth being open, the tongue blackish and protruding, the tail slinking between the legs, and an appearance of blank absence of consciousness), and seek some hiding-place wherein to sleep, yet inevitably bent upon biting whatever disturbs it even for caress; there have been instances, however, in which the destructive propensity was quite absent; whereas, on the other hand, cases very frequently occur, in which the animal, in its furious destructiveness, will wrench out its own tusks.

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* The popular notion, that a dread of water accompanies rabid disease, is an error. The real symptom is utter incapability of swallowing liquids; but far from testifying an aversion to water, the animal eagerly plunges its muzzle deeply into it, as if te allay an intense heat and intolerable thirst.

Sheep affected with rabies derive it by inoculation from the bite of a rabid sheep-dog or other dog; they toss, plunge, and butt, but do not bite; the same spirit of destructiveness characterizes the disease, and distinguishes it from the more heedless fury of brain fever. It becomes developed in sheep at periods varying from ten to thirty days after the bite, in general, but sometimes remains inactive for more than two months. They are seen to mount each other (irrespective of sex), become stupid, then succeed convulsions, or the peculiar violence and destructiveness of madness, with boring at the ground, a little foam at the corners of the mouth, discharge from the nostrils, and flow of saliva from the mouth; thirst does not seem so strongly developed as in the dog, but there is a strange preference for filthy food and drink. The bleat, like the howl of the dog, is shriller than is customary. In the ox, &c. (affected only by inoculation), the symptoms are more nearly analogous to those manifested by the dog;—the paralysis of the quarters, and the eagerness to plunge the muzzle into water, occasionally biting as well as plunging with the horns;—there is much discharge of foam from the mouth, and any of the various symptoms before described may prevail. The horse (affected only by inoculation), suddenly manifests symptoms of madness, by unaccountably stopping, trembling violently, heaving at the flanks, pawing the ground, tottering, and finally falling; the same thing recurs several times, and shortly afterwards the violent symptoms of destructive fury; the horse kicks, bites, and plunges violently at every object, animate or inanimate; the thirst is intense and indomitable, and deglutition impossible, or so difficult as to be effected by sudden gasps; violent snorting, with expulsion of ropy phlegm, and foaming at the mouth, and other symptoms peculiar to the disease as above described. The same symptoms affect the pig (affected only by inoculation), as have been already described generally; there is, however, a peculiar analogy between the symptoms of rabies in the pig and in the human being.

It should be borne in mind that *rabies* is a disorder of comparatively rare occurrence. Dogs may be *insane* without being "*mad.*" Thus it happens that many animals, bitten by dogs which were believed to be "mad," that is, to have rabies (hydrophobia in man), have escaped unharmed. This important distinction between insanity in animals, which may be harmless, and "madness" or rabies, which must always be dangerous to the last degree, has not before been brought to notice in works on veterinary practice. See the section on "Insanity of Animals," in Chapter III of this work.

233. Treatment.—If a bite be detected at the time at which it occurs, or before the active symptoms supervene, simultaneous local and constitutional treatment may avail to arrest the development of the disease.

External Application.—An iron plate, red-hot, may be held at such a distance from the wound as not to scorch the parts, but at the same time to expose them to the strong action of heat, until shivering is manifested; this operation being repeated every four hours during the first day, and afterwards twice a day, until the wound is healed, leaving no trace of unnatural color, &c. But another way:

Youatt says, "If a horse is bitten by a dog under suspicious circumstances, he should be carefully examined, and every wound, and even the slightest scratch, *well burned* with the lunar caustic (nitrate of silver). The scab should be removed and the operation repeated on the third day. The hot iron does not answer so well, and other caustics are not so manageable. In the spring of 1827, four horses were bitten near Hyde Park by a mad dog. To one of them the lunar caustic was twice severely applied—he lived. The red-hot iron was unsparingly used on the others, and they died. The caustic must reach every part of the wound. At the expiration of the fourth day the horse may be considered safe."

Belladonna.—Ten drops every three hours may be given internally, after the application of the red-hot iron, or caustic.

Lachesis has been advised, to be given under these circumstances, instead of Belladonna. The indications may be found by consulting the Materia Medica.

The medical treatment of this fearful disease when fully developed offers so little prospect of success, and is neccessarily attended with such great danger, that it is not likely ever to be attempted.

234. Stringhalt and Chorea, or St. Vitus's Dance.—An affection common to dogs and horses; to the former, under the name of **chorea** (or St. Vitus's dance); and to the latter, under the denomination of stringhalt. It consists of an involuntary catching, twitching, or convulsive jerking or pulsation of one or more muscles. In the horse it is confined to the hock, and is manifested on first leaving the stable, going off with motion, and totally unconnected with any blemish or unsoundness, being purely nervous (that is, an irregular distribution of nervous action). As regards the dog, it is more general, extending to different parts of the frame, and even affecting many parts at once. It frequently succeeds to distemper. The muscles of the neck and head are often particularly affected, the head and neck being affected with a vertical, pulsating movement; the jaws opening and closing, the eyelids and eyes being wrung and sometimes distorted. Sleep often allays the symptoms, but is generally uneasy; in a recumbent posture, the legs in particular are affected. This affection, if protracted, is attended with loss of flesh and strength, and degenerates either into paralysis or epilepsy. It may terminate in true convulsions, epileptic fits, or in *paralysis agitans*. In the latter case, the movements resemble those of chorea, but they continue invariable during sleep, are of a tremulous character, affect the whole system of voluntary muscles, and are aggravated by whatever excites alarm or fear. In chorea, the dog is quite conscious, and his power of volition remains good. The choreic movements do not occur in paroxysms; and the muscles which are affected with unnatural and unsteady movements are still under the influence, but not under the absolute control of the will. There is no febrile excitement whatever.

The peculiar twitching or sudden and convulsive picking up of the leg, known as stringhalt *in horses,* is obviously due to some affection of the nerves.

In some cases it may be traced to the pressure of some exostosis on a nerve; but as a general rule we are unable to account for the affection, nor does post-mortem examination always show any abnormal state of the nerves.

The disease varies very much in degree or intensity in various cases. It generally affects one or both hind legs, but it is also occasionally noticed in the fore leg.

In the early stage it is most easily detected, when the animal is first put in motion, and also when he is in the act of turning. The disease generally increases with age, and, though at first it may produce but little or no inconvenience, in the end it generally becomes not only very unsightly, but also seriously interferes with the action.

235. Treatment.—*Cimicifuga.* One of the most valuable of the new remedies, Cimicifuga may be confidently recommended in the chorea of dogs; and in conjunction with Nux vomica it may be employed with good prospect of benefiting the hitherto incurable stringhalt of horses.

To dogs this medicine should be given in four-drop doses, thrice daily; to horses ten-drop doses may be given night and morning.

Nux vomica will be indicated by confined bowels; impaired appetite, and other symptoms of disordered stomach; trembling, or convulsive jerking of the limbs, or of sets of muscles; irritability of temper.

Dose.—Ten drops thrice daily.

Ignatia.—Convulsive movements of the limbs, eyes, eyelids, or muscles of the face, aggravated by fright.

Dose.—Six drops every four hours.

In these chronic cases it may be better to mix the drops in water, as advised in page 34; and to give the solution in divided doses of one or two tablespoonfuls twice or thrice daily.

Consult also the following named remedies in the Materia Medica: Agaricus, Arsenicum, Belladonna, Causticum, China, Cocculus, Cuprum a., Dulcamara, Hyoscyamus, Pulsatilla, Sabina, Sepia, and Silicea.

236. Epilepsy—Fits.—A complaint to which horses and oxen, &c., are little subject, but which frequently occurs to sheep, especially late in the autumn and early in the spring. It occurs also very severely amongst pigs, owing to their peculiar nervous susceptibility; and it is very common and fatal amongst dogs (especially puppies during the process of teething, if difficult), and appears as the consequence of distemper, worms, want of exercise, succeeded by overexertion, &c.

General Causes.—Protracted complaints of any kind, difficulty in cutting the teeth, sudden transition from poor to overrich food; grazing upon cold, moist pastures, especially when much dew is on the grass.

Symptoms.—Sudden stopping or ceasing to graze, reeling, staggering, turning round and round, and finally falling, succeeded by convulsions often very severe; after which the animal gets up, shakes its ears, stares vacantly and stupidly about it, and resumes its former occupation and feeds. Oxen sometimes bellow fearfully at the onset of the fit; and when the convulsions prevail, the teeth are ground together and clenched, and a species of foam mixed with food appears at the corners of the mouth, whilst the evacuation of excrement and urine is spontaneous; the animal, however, quickly returns to apparent health when the convulsions subside, and after looking vacantly about it, continues to feed or ruminate. Amongst pigs, we are forewarned by a peculiar pale appearance of the skin, continual grunting, uneasiness and tottering movements; the fits are very severe, coming on with sudden fall, and a period of perfect immobility, succeeded by the following symptoms: the legs convulsively and rapidly drawn up and flung out; the tongue thrust out from between the clenched jaws and grinding teeth; the muscles of the face violently distorted; the eyes prominent and violently agitated; the pupils dilated; the pulse first small and hard, then very full and impetuous; and lastly, as the convulsions subside, uneven and fitful, when the animal crouches away for a time, shortly afterwards reappearing with no appearance of derangement.

237. **Fits** frequently occur with young dogs: they come on suddenly, and never attack those with rabies. When out for a long walk, the dog may get heated, and the blood rushes to the brain. He lingers behind; appears stupefied; utters a loud shriek, and falls down convulsed. If this happen in the street, get the dog home as quickly as possible. In the country, more time can be given for recovery.

238. **Treatment.**—*Aconite:* The fits come on from being overheated.

Belladonna is the principal remedy (where it seems indicated and does not help, *Stramonium* may be given); irritability of the nervous system, with twitching of the muscles, contortion of the face, and convulsive action of the muscles of the mouth; protrusion, redness, and sparkling appearance of the eyes; rigidity of the body, with the head and body drawn backwards during the actual seizure; he tumbles about, and falls down on his side; foams at the mouth; breathing labored; eyes staring; wild look; urine and fæces pass involuntarily; limbs stretched stiffly out; convulsive and violent twitchings; when the fit is over, he will get up and resume his walk. When the fit is caused by teething, lance the gums and give Belladonna.

Chamomilla.—Fits caused by derangement of the stomach and colic, as shown by vomiting of sour fluid and symptoms of abdominal pain preceding them.

Arnica.—Fits resulting from injuries to the head.

Calcarea c.—When the fits are due to deficient growth of the teeth, this remedy, by promoting their development, will remove the cause of the spasm. Calcarea may be given in alternation with Belladonna, night and morning; thus favoring the growth of the teeth, and relieving the painful irritability.

Argentum nit. has acted most beneficially in the convulsive seizures which come on during distemper.

Cuprum is especially indicated when the attacks are caused by disorder of the great nervous centres, especially the brain. (For the spinal cord, Nux v.)

Hyoscyamus will be indicated by violent movements of the thighs during the attacks.

Nux vomica.—When the attacks are referable to indigestion, or to constipation.

Compare in the Materia Medica the following remedies, in addition; Agaricus, Arsenicum, Camphor tincture, Causticum, Cina, Cocculus, Conium, Ipecacuanha (for sheep especially), Kali carb., Lachesis, Lycopodium, Natrum mur., Nitric acid, Opium, Sepia, Sulphur, and Silicea.

Doses.—The administration should take place immediately after a fit, and should be repeated in two hours, then in four hours more, and, again, twelve hours later; or during the premonitory symptoms, the appropriate remedy should be rapidly repeated (every ten, twenty, or sixty minutes) until the threatening manifestations subside.

Dose.—For any of these medicines, mix from four to ten drops in one pint of water, give from a teaspoonful to two tablespoonfuls, according to the size and age of the patient; repeated as directed above, for acute affections.

To prevent the accession of the complaint, and radically cure the patient, the appropriate remedy may be given once a day, intervening an occasional dose of Sulphur, six drops in a little water.

239. Tetanus—Lockjaw—Trismus.—In order to be of any avail, the treatment of lockjaw must be undertaken before the disease is confirmed, wherefore we will simply trace the initiatory symptoms.

Causes.—Wounds of any kind, with or without evident inflammatory action; operations, such as castration (a frequent cause amongst pigs), docking, cropping, nicking, &c.; exposure to wet and cold, sudden chills, overdriving, and a variety of obscure analogous causes may occasion lockjaw.

Symptoms.—The symptoms which attend upon this disease are more analogous amongst horses and cattle, and amongst sheep and pigs; in the latter case differing considerably from those identified with the two former species. Amongst horses and cattle, the pulse is at first perfectly healthy, and does not become irregular, quick, and small, until the disease has advanced almost too far; the muzzle, horn, and ears, are also healthy: the first moist, the second only naturally warm, and the third the same (not cold). But still the animal stands rigidly fixed, or apparently afraid to move, with the head stretched forward horizontally, the nostrils dilated, the eyes turned outwards, sunken and retracted, the membrane from the corners partly drawn over the eye; the tail held up and tremulous; the legs splayed out (outwards, forwards, and backwards), &c.; the quarters depressed (as if in the act of staling); the body incapable of bending, so that the animal on turning moves round with the whole body in the same rigid position, the muscles of the neck, flanks, and belly being strongly developed, stiff, and hard; and if the finger be inserted in the mouth, the teeth will either be found convulsively clenched or slightly parted, and incapable of being forced wider apart.

Sheep and pigs are subject to spontaneous convulsive motions of the head, and of one or more of the limbs, or of all the extremities; grinding of the teeth, and rigidness of the jaws; after which the neck becomes stretched out, the head being drawn upwards or backwards, the body generally fixed and stiffened, and often one leg severely contracted, drawn up and stiffened, as if it were tied immovably together, or the extensor muscles were severed, or as if it had been broken and had become set in a distorted position. Occasionally, also, there are intervals of violent convulsion, intervening between the periods of extreme rigidity. In such cases the disease will generally terminate fatally in the course of one day; but if the animal survives the second, there is hope of recovery.

240. Treatment.—Tincture of Camphor is often sufficient, if administered in the earlier stage of the disease.

For horses, oxen, &c., a piece of stale bread-crumb may be saturated with from twelve to twenty drops of the Tincture, and given immediately, succeeded by another dose in one hour, and a third two hours later, and a fourth four hours later, if necessary, or more frequently if required by the urgency of the symptoms. For sheep and pigs, from six to twelve drops, in like manner, or by olfaction, if other means be impossible.

Arnica may be given instead of Camphor, and in a similar manner, when the difficulty is caused by mechanical injury.

Belladonna has been found useful in some cases; it may be given in alternation with Arnica, or with Nux vomica. For special indications consult the Materia Medica.

Nux Vomica is the most important remedy; and either alone, or in conjunction with Belladonna, has made cures of this usually fatal affection. This medicine acts very favorably on the horse. It may be given in ten-drop doses, once in three hours, till improvement sets in; then the doses should be made four or six hours apart.

Arsenicum may be given for any remaining rigidity; a dose of this in the morning, and a dose of Nux at night.

The medicines may be given by means of a small tube or funnel, or by a syringe thrown in upon the tongue.

Gelseminum tincture, forty drops once in half an hour, may entirely relax the spasm which constitutes tetanus or lockjaw—cures have been made in men, and it is worthy of trial in horses or other animals.

The most efficient method of administering the diluted remedy in this or in fact in any other disorder where the patient can swallow, is by first mixing ten drops in a pint of water, and giving it in one or two tablespoonful doses, repeated according to the necessities of the case. But where the mouth can scarcely be opened, a few drops of the selected remedy may be placed upon the tongue.

Chloroform may be tried if these remedies fail; two drachms poured upon a small towel may be inhaled. This should be slowly given, and may be repeated once in two hours, if no perceptible effect is earlier produced in such cases.

Nitrate of Amyle, twenty drops at a time, may be given by inhalation, if all other means prove ineffectual; or it may be employed in preference to chloroform. This is a new and very valuable remedy for spasmodic disorders.

241. Paralysis—Palsy—Paraplegia.—This is very rare, and only partial in the horse. It implies paralysis of the hind extremities; for this is really the only form of paralysis met with. It is generally caused by attempting to stop a heavy load going down hill, or by slipping up, or straining the back by a leap. In such a case the back may be broken, and death ensue; or the vertebra may be dislocated, and the spinal marrow affected; and thus a permanent weakness would ensue. It may also be caused by a tumor pressing on the nerves which supply the hinder limbs. Paralysis may be caused by an attack of staggers. Severe blows on the head or back might produce it, by injuring the spinal marrow.

As regards the dog, sheep, and ox, this disease is intimately connected with rheumatism (and chest-founder of dogs), and which may also ensue as the consequence of protracted and debilitating diseases, in which the nervous system has been severely involved. Palsy of horses may be traced to intestinal inflammation, or to mechanical injuries affecting the spine. Damp, cold, and unhealthy kennels or cow-houses, and damp, bleak, or exposed folds, are the hotbeds of rheumatic disorders terminating in palsy. The hind quarters are chiefly affected, and the absence of any other distinct constitutional disturbance attending the local or general deficiency of nervous energy, will identify the affection as palsy, properly so called.

242. **Treatment.**—*Arnica* is to be employed when the paralysis results from bruises, blows, or other mechanical injuries; such as those caused by beating on the head or back with a heavy whip-stock, or by heavy bodies falling upon the animal's back.

Helleborus proved curative of an attack of paralysis of the right side of a horse, which came on suddenly, and was doubtless caused by dropsical pressure upon the spinal cord. Twenty-drop doses of the second dilution brought on general perspiration. Petroleum occasioned profuse discharge of urine, and Rhus completed the cure by removing the remaining stiffness of the limbs.

Rhus tox. should be given, in ten-drop doses, three times a day, when the paralysis results from a sprain, or overwork, as in running or jumping.

Belladonna is required in cases which come on gradually, and appear to have been caused by congestion.

Nux vomica, when the palsy is due to weakness or impaired nutrition of the spinal cord. This remedy will be most likely to be useful in that numerous class of cases in which the disorder arises from no assignable cause.

Graphites has been found best, by Dr. Moore, in facial paralysis, he having cured many such cases with this medicine.

Arnica, Bryonia, Causticum, Lycopodium, Sulphur, and **Ruta,** may be consulted for paralysis resulting from chest-founder, and from rheumatism.

China and **Sulphur** should be studied for paralysis succeeding severe inflammatory or debilitating disorders.

External Treatment of local paralysis, occasioned by rheumatic affections or lesion: Tincture of Arnica, or Tincture of Rhus Toxicodendron, may be applied externally, with great effect (according to the specific indications for those medicines as laid down in the Materia Medica).

Application.—To one part of either tincture add from four to six of water, and bathe the parts with this lotion three times a day, until the symptoms subside.

Dose.—Mix thoroughly twenty drops of the selected remedy in one pint of water; give a wineglassful, or one or two tablespoonfuls, once in four hours.

In severe cold weather it may promote the absorption of the medicine externally to apply it warm.

In addition, consult also, in the Materia Medica: Arsenicum, Bryonia, Cocculus, Calcarea c., Causticum, and Dulcamara.

CHAPTER VI.

DISEASES OF THE DIGESTIVE APPARATUS.

SECTION I.

DISORDERS OF THE STOMACH.

243. Hoove—Hooven—Tympanitis.—From decomposition or fermentation of food gases are sometimes evolved which rapidly and enormously distend the stomach. Overeating, especially of unusual articles of food, which causes a sudden indigestion in cattle, gives rise to this severe and dangerous affection. In horses it assumes rather the form and name of *Colic.*

244. Treatment.—Remove all food from before the animal as soon as the distension is observed. Dr. Moore advises suddenly to dash cold water over the belly, which stimulates the walls of the abdomen to contract and helps expel the gas. Gamgee advises to give an ounce of hartshorn (solution of Ammonium carbonicum) in a quart of water, which may tend to neutralize the gas already formed in the paunch; and it may at least serve to prevent the formation of more.

Ammonium causticum forms the best remedy, according to the experience of Dr. Moore; he gives ten drops of the strong solution in three wineglassfuls of water, every ten, fifteen, or thirty minutes, according to the urgency of the symptoms and the effect produced. This is nearly equivalent to Mr. Gamgee's prescription of hartshorn just referred to.

Colchicum autumnale.—For tympanitis in sheep and pigs, Gunther recommends this remedy, which, he says, in general, is sufficient in a single dose to remove all the symptoms in the space of a quarter of an hour, in sheep. Two or three doses, he affirms, are sufficient to remove all the symptoms, in swine, in one hour. And he adds that there is no disease in domestic animals in which homœopathy affords such prompt relief as in this. Give ten drops every thirty minutes, till relief comes.

Belladonna may be needed if there is intense distress, almost causing delirium. Give six drops every fifteen minutes till better.

For the weakness of the stomach, which favors the development of hooven, or "blown," Nux vomica and Lycopodium are admirably adapted. Give ten drops of the former at night, and a similar dose of Lycopodium in the morning.

But if from any reason the remedies fail to relieve in season, recourse must be had to surgical means. A trocar or other instrument must be introduced at a spot midway between the last rib and prominent point of the haunch, or antero-inferior spine of the ilium, and about eight or nine inches below the transverse process of the lumbar vertebræ; a small cut is made through the skin, and then the point of the trocar is applied to the wound, and thrust into the paunch, when the stylet is removed and the gas escapes. Sometimes cows get down after calving, cannot get up, and the same tympanitic condition sets in from debility, or rather from indigestion caused by the debility. In such cases we have inserted a small trocar, allowed the gas to escape, which it did with a whistling sound, and the enormous bloating subsides so as to allow the animal to rise. Some such apparently hopeless cases, corresponding to the tympanitic distension which forms the most dangerous symptom in puerperal fever in the human subject, we have saved in this manner, assisted also by a few doses of Bryonia.

Arsenicum, in a single dose, is advised by Gunther, to prevent a return of the difficulty. But unless there are special indications for this remedy, Nux and Lycopodium, as above recommended, may be more appropriate. When cattle are first permitted access to rich clover pastures, care should be observed to prevent their eating too greedily of the new food, even limiting the quantity, until they are somewhat accustomed to it.

245. Indigestion.—Indigestion in the *horse,* is derangement of the process by which the food is naturally digested—is disorder rather than structural disease of the stomach, and probably also, though in a less marked degree, of the liver, intestinal glands, &c.

It arises from giving indigestible food; allowing too much food after giving too little; eating too much at too long intervals; imperfect chewing either from diseases or irregularities of the teeth, or from greed; severe work soon after a meal.

The tongue is foul and coated; the mouth slimy; the dung dry and mixed with undigested oats, or hard, glazed, and offensive; the urine scanty and thick. The appetite is unnatural or capricious; sometimes the horse eats very greedily, at another he eats very little, or takes one food and leaves others; or he prefers dirty straw to the best oats and hay; or he licks the walls and swallows the plaster from it. He soon gets out of condition, loses flesh, does not thrive, and his skin looks "hidebound." He sweats easily, and does not work so well as formerly, being weak and spiritless. Very often, he has a short, hacking, irritating cough. It is evident from his manner that he sometimes suffers from smart colicky pains.

In cows, the symptoms do not vary much from those of the horse. The milk is poor in quality and scanty; purging, belchings, and retching are also observed.

In *dogs*, the appetite is vitiated and impaired: vitiated, because the dog has a keen relish for spiced, or sweetened, or stimulating food, or for paper, string, &c.: impaired, when the dog turns up his nose at wholesome food, or eats a little of it with feelings of ill-concealed disgust. There is considerable thirst, and occasional attacks of sickness. In some cases a quantity of fluid bobs up from the stomach into the mouth, and is slavered about. Occasional attacks of diarrhœa are not unfrequent, alternating generally with constipation; or constipation alone may exist. Flatulence is another frequent symptom of indigestion. Many skin-diseases follow in the wake of this disorder. Excessive fatness, accompanied by asthmatic breathing and cough, is induced by it. Excessive constipation, foulness of the breath, inflammation of the gums, &c., may be cited as some of the effects of long-continued indigestion. Indeed there are few chronic diseases in the production and continuance of which indigestion does not play an important, or even an exclusive part.

246. Treatment.—Give *Nux vomica* for depraved, fastidious, changeable appetite; confined bowels; dung hard, lumpy, and glazed on the surface with mucus; tongue furred and slimy. Suitable for horses, dogs, and cattle.

Arsenicum is a most valuable remedy when the horse is weak and unthrifty, eats little or nothing, coughs frequently after eating or drinking, also where there are watery stools unattended with pain.

Ferrum may be used, especially when Arsenicum seems indicated but does no good, for horses.

Carbo vegetabilis.—Recommended for indigestion with flatulence, purgings, distension of the stomach and bowels and cough; also when the fluid rises in the mouth.

Mercurius is indicated when the liver is deranged as well as the stomach; and when the skin and eyes have a yellow color.

Antimonium crudum.—Aversion to food; stools consisting of large feculent lumps.

Bryonia when cold or irregularity of diet occasions indigestion with constipation or diarrhœa, with loss of appetite.

Ipecacuanha.—In the horse, when the indigestion is carried to an extreme degree; the animal is found to be very restless; he holds his head down very much; keeps at a great distance from the manger; frequently strikes with his fore feet, and almost always sweat is oozing from him; the stools are dry and mixed with undigested oats. Ipecacuanha in these cases may be followed or alternated with Nux vomica, if there is constipation; or Arsenicum if the bowels are more loose.

Pulsatilla is called for if there is total loss of appetite, with liquid and fetid stools.

China followed by Nux vomica, will be found useful in the case of horses, naturally delicate, which when shedding their coats fall into a state of debility extending even to the digestive organs, and preventing their eating with an appetite.

Sulphur.—In chronic indigestion a dose of this remedy may be given every morning, with Nux vomica at night, with great profit, where the general symptoms indicate the latter remedy.

For additional indications for these medicines, and also for *Calcarea* and *Silicea*, which may prove homœopathic to some chronic cases, consult the Materia Medica.

Diet.—Let the animal abstain from food as much as possible till cured, in acute cases; and in chronic cases, see to it that the aliments allowed are as easy of digestion as they can be.

Dose.—Give of the selected remedy to a horse or cow suffering with acute indigestion ten drops, every hour till better, then every two or three hours. Smaller doses in proportion for the smaller domestic animals. See also the indications set down for the treatment of Colic, especially flatulent colic, which may greatly resemble acute and violent indigestion.

247. Gastritis.—This disorder occurs, not very frequently, in the *horse*, and is dangerous from the readiness with which it passes into gangrene. The affected animal is very restless; throws himself on the ground, then stands up, turns himself, scrapes and strikes with his fore feet; frequently looks at his belly. Many of the symptoms of gastritis are similar to those of colic; but in this latter disorder are none of the marks of high inflammation which the former disease presents. The pulse is hard and accelerated; respiration difficult, and appetite gone. The horse looks as if he were yawning or biting; his entire body is of a burning heat; his mouth especially is dry and hot. If not remedied death may terminate the disease in two days; most frequently the animal dies delirious. The causes are excess of food which is too rich, and exposure to cold.

In the *dog* gastritis, or inflammation of the stomach, may be caused by irritant poisons, and the inflammation in that case extends the whole length of the bowel also.

The most frequent cause of gastritis is the continued ingestion of stimulating food, or of food otherwise unsuited to the requirements and habits of the canine race. Favorite dogs are especially affected with gastritis, from the circumstance that improper food is either given to them, or they are allowed to eat it.

The form of gastritis which is thus produced takes on the character of aggravated indigestion. The most marked symptom is incessant vomiting,—whatever is swallowed is rejected,—and the effort of vomiting is evidently attended with more or less pain. The thirst is extremely urgent, and lapping cold water or licking the cold ground seems to give relief. The appetite fails, the nose is dry, the breathing quick, the countenance is anxious, the legs are cold, &c. The dog lies stretched out with his belly in close contact with the cold ground,—a position which in itself is almost sufficient to distinguish gastritis from any other disease.

248. Treatment.—The most suitable medicines in gastritis are the following:

Aconitum when the attack is attended with quick pulse, hot skin and nose, and the other indications of febrile action.

Arsenicum when the vomiting (in the dog) is incessant and painful, the thirst unquenchable, the pulse small, the legs cold, and the countenance expressive of anxiety.

Mercurius when the vomit consists of biliary matter, when the thirst is insatiable, the bowels costive, and the tongue foul.

Nux vomica when the attack is the result of long-continued indigestion, or has been directly induced by drinking cold water; when the bowels are confined, and the retching frequent and painful.

Carbo vegetabilis may be needed in cases where the abdomen is bloated, as with flatulence; liquid diarrhœa; coldness of the limbs; useful after Arsenicum.

249. **Loss of Appetite.**—This is often a symptom of other disorders; but may occur when no other illness can be detected. Occasionally it is caused by inflammation of the tongue, gums, or throat; in this case

Mercurius will be indicated.

Arsenicum should be given when the loss of appetite results from bad state of the stomach, indicated by heat of the mouth, red tongue, or dry and fetid breath.

Antimonium crudum.—For loss of appetite occasioned by an excessive quantity of food, overloaded stomach.

Pulsatilla.—Loss of appetite, with diarrhœa.

China.—Loss of appetite from exhaustion.

Nux vomica, often needed, especially when the loss of appetite is caused by taking cold, as in cases of coryza, in influenza; also for the bad effects of overexertion (China), by which the nerves of the stomach as well as of other parts of the system are weakened.

Bryonia.—Loss of appetite with constipation.

Dose.—Ten drops of the selected remedy night and morning.

250. **Depraved Appetite.**—In this disorder of the stomach, the animal devours wood, leather, earth, or other unsuitable substances. Perhaps the irritation which it thus seeks to relieve may be the result of worms in the intestines.

Natrum muriaticum may be given when improper substances are preferred to the ordinary food.

Sepia.—When the appetite is voracious.

Pulsatilla, and also **Nux vomica** and **Arsenicum**, should be studied, in the Materia Medica, when loss of appetite is accompanied with roughness of the hair, debility. Emaciation indicates a failure of nutrition, caused by some chronic, obscure disorder, which if not relieved will lead to death.

Loss of appetite from worms.—Consult *China*, Spigelia, Sulphur, Ferrum, Ignatia, Stannum, and Cina.

251. Absence of Thirst.—This may be the result of inability to swallow water, as from swelling in the throat. Or it may form a remarkable attendant upon dropsy. Most commonly it is only an attendant symptom of some existing disease, and needs to be taken into consideration in making a prescription for the whole case.

Aconite and **Mercurius** will be required when the throat is swollen

Apis mel.—When there is inflammation and dryness of the fauces, or dropsy without thirst. Diarrhœa.

Sulphur may be given, if the cause remains obscure, and the difficulty persists.

Dose.—Ten drops three times a day.

Dose in general.—Mix thoroughly ten drops of the selected remedy in one pint of water; give, according to the size of the animal, two tablespoonfuls, one, or even a teaspoonful for the smallest; repeat the dose once in from two to four hours, according to the urgency of the symptoms; for chronic gastric affections give a dose night and morning; when better, at night only.

SECTION II.

DISORDERS OF THE BOWELS.

252. Colic—Gripes.—Colic is an affection of the intestines, which appears in two distinct varieties amongst cattle, viz., spasmodic and flatulent colic, and which attacks the animal without any previous or premonitory symptoms, and which is not necessarily attended with constitutional disturbance, unless the paroxysms be unusually protracted.

General Causes.—Spasmodic colic usually proceeds from sudden exposure to draught, especially after violent exertion; from the animal drinking deeply of cold water before it has time to get cool after severe exercise; or even, not unfrequently, from devouring an inordinate quantity of green and succulent food (particularly if this occurs while the animal is hot). It has also been traced to the presence of mineral substances in the water, in particular districts, in which, under such circumstances, colic is extremely prevalent; constipation, or diarrhœa, if obstinate, will be attended by a severe form of colic. Grains, when first given to cattle, have been known to provoke this complaint, and also the superabundance and overrichness of the food generally, as well as its deficiency or poorness. Flatulent colic, which is of more rare occurrence, but which is occasionally distinguishable amongst cattle, is attributable to the gaseous distension of some of the intestines, owing to the fermentation of the food within them, and may, therefore, be more remotely caused by anything which will engender such fermentation.

Symptoms of Spasmodic Colic amongst Horses.—This complaint, which, if neglected, or very severe, may ultimately proceed to inflammation of the bowels, is characterized by: sudden paroxysms of pain, with intermissions, evinced by the animal pawing the ground more or less violently, continually and restlessly changing position, kicking, with the hind feet, at the stomach, suddenly snatching up one foot after another, and slowly relaxing and replacing them on the ground; the animal suddenly stops in the middle of his feed, looks round at his flanks, and emits one or two puffing expirations, but, as soon as the paroxysm has passed off, he resumes his feeding as earnestly as ever, frequently, also, shaking himself; horses generally lie down; the legs are alternately drawn close to the belly, or stretched out, sometimes rigidly,—or they will roll themselves violently on the back, first one way then the other; if the attack is repeated again and again, it becomes more severe, and the puffing and heaving are more striking,—the movements are more violent, and a copious sweating ensues. Cattle are very similarly affected by spasmodic colic, except that, instead of rolling, they are continually lying down and getting up again; restlessly agitated, or, in some cases, savage. When flatulent colic occurs, the symptoms are also accompanied by frequent emissions of wind, in both directions; by distension of the right side in particular, and by painful moaning (which, however, usually occurs with both forms). Pigs, amongst which colic is very prevalent, utter the characteristic squeal or squeak,—are, like other animals, very uneasy and agitated, and roll or rub themselves severely. Dogs, attacked with colic, give vent to the short, snapping yelp (sometimes two such yelps, succeeding each other very quickly), they suddenly turn round, and snap at their flanks; they are continually shifting positions, and changing resting-places; now coiling themselves in one remote, dark place, and anon springing up, snapping again, and running to another retreat; but, as with other animals, there is no symptom of constitutional disturbance.

In horses, colic or the gripes forms one of the most common and fatal diseases. It may be caused by indigestion, constipation, by dust-balls and stony concretions, by exposure to cold, drinking cold water when overheated, and be the result of exhaustion of the nervous system following hard work and improper food; or it may be caused by worms, bots, attacking the intestines—in this latter case the agony is most intense. When attacked by colic, the horse becomes restless, walks about, crouches, paws the ground, kicks his belly with his hind feet, looks often round to his side. Presently he lies down, and rolls about with more or less violence, sometimes resting on his belly and looking round anxiously at his flank, sometimes stretched out full length, sometimes turned on his back, in a state of comparative calm. The pain now remits—he gets up, shakes himself, and begins to eat, or nibble. Before long, another attack, more severe than the first, seizes him, and the old symptoms are repeated with greater violence than before. He throws himself about wildly, utterly indifferent to the injuries he self-inflicts; his eyes stare and look anxious; he breathes fast; his skin is more or less covered with sweat; he tries to stool but passes little or nothing; he perhaps voids a few small hard lumps of dung. After several such displays, the attacks become milder and fewer, and finally cease; or they increase in number, and then he exhibits indications of exhaustion; walks unsteadily, or reels round the box; finds no temporary relief save when lying against the wall on his back; his muscles twitch; his breathing is quick and groaning; his pulse small and hurried; he breaks out in patches of cold sweat; the retracted lips expose the clenched teeth; and ere long, death closes the painful scene.

Colic may continue from half an hour to a day, and may lead to death from rupture of the bowel, or of the midriff, or from twisting of the bowel.

There is another form of this disease, called by some *flatulent colic*, or *acute indigestion*, which arises from eating too fast, overloading the stomach, drinking too much water, working on a full stomach, eating turnips, carrots, potatoes, rank grass, &c. The food either remains undigested, or it ferments and gives off gas which distends the stomach and bowels. This corresponds to the affection of oxen and sheep, above described under the name of "Hoove." The symptoms are similar to those just related, but the belly is more or less bloated, rumbling noises are heard, wind is discharged from the bowels, and the horse retches, and may succeed in vomiting.

253. Treatment.—According to Dr. Moore, from whose work we have taken a portion of the account of colic in horses, *Ammonium causticum* is the only single medicine which can speedily cure the largest proportion of colic cases; it is more especially suitable for "windy colic."

Dose.—Ten drops every half hour.

Aconite.—Some veterinarians advise to begin the treatment always with this remedy, which is especially suitable in cases of this kind resulting from cold. It is thought to exert a favorable influence in moderating the violence of the attack, and may thus render more easy the final cure by other medicines.

Nux vomica is the best remedy when the attack arises from eating indigestible food, or from overeating, or from accumulation of excrement; when hard, dry lumps are discharged; when the horse makes straining efforts to urinate and dung, without any result, or with but little; when the pain is not of the most violent character, and the horse does not knock himself about savagely, but lies a good deal on his side, restless and uneasy, and every now and then looks round to his side.

Nux vomica may be advantageously given in alternation with Aconite; dose of each, ten drops every half hour, in cases of spasmodic colic, such as is caused by chill, or by constipation.

Dr. W. C. Lord* has reduced the treatment of colic in horses to a simple process: he gives ten drops of mother tincture of *Nux vomica* in alternation with ten drops of mother tincture of *Aconite;* he uses also enemas (injections to the bowel) of warm water, and cloths wrung out of warm (hot) water applied to the abdomen in severe cases; by this procedure he cures his patients very promptly, and claims not to have lost a single case of colic.

Colocynthis is indicated in cases attended with most severe pain, causing the animal to roll about violently; also when the attack appears to result from eating green food, and the belly is much distended with gas; and when wind and watery motions are discharged by the bowel.

Antimonium crudum.—The following symptoms, which Dr. Moore considers "stomach pain," but which in reality constitute a form of flatulent colic from indigestion, he never failed to remove with this remedy; dose, ten drops in a little water every hour or half hour till the animal is relieved: the horse shows by his manner, restlessness, and looks, that he is in pain; he turns his head round to the left side and puts his nose there behind the left elbow-joint. Besides, wind (gas) rises up from the stomach, and in its passage along the food-tube causes a waving motion similar to that—only in the opposite direction—which takes place when water or food is swallowed.

Cantharis.—Colic caused or accompanied with retention of urine.

Hyoscyamus must be given in this condition, if Cantharis fail, and it is said to be always successful in such cases.

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* Monthly Homœopathic Review, Nov., 1865.

Colchicum.—Flatulent colic caused by green fodder or other unsuitable food. This "always succeeds," says Gunther. See "Tympanitis."

Opium.—Colic from constipation, when the stools are scanty, blackish, as if burnt; in these cases relief should be sought by giving enemas, injections of warm soapsuds. Opium may be given in alternation with Nux vomica, for obstinate constipation caused by the colic, and which, in turn, tends to renew or keep up the distress.

Plumbum may be required for colic caused by constipation, when the stools are small, hard, and lumpy, more like bullets; when the rectum is empty, the animal remains a long time tranquil, and the attacks of colic are not very acute, and longer intervals come between them. May be given in alternation with Nux vomica or Opium.

In addition to these remedies, consult in the Materia Medica the following:

For spasmodic colic.—Arsenicum, Belladonna, Chamomilla, Cocculus, Cuprum, Hyoscyamus, Ipecacuanha, Kali carb., Lachesis, Pulsatilla, and Sulphur.

For flatulent colic of cattle.—Carbo veg., China, Graphites, Natrum m., Nitri. acid., Phosphorus, Veratrum, and the former.

Dose.—The selected medicine should be given in doses of from six to ten drops in a little water, according to the size of the animal, and repeated every fifteen, thirty, or sixty minutes, according to the severity of the symptoms.

254. Inflammation of the Bowels.—*Symptoms:*[*] Amongst *sheep*, it is evinced by the symptoms which accompany colic, but very soon in a most aggravated form, and additionally by the evident disposition to lie down, and the preparatory bending of the knees, without, however, assuming a recumbent position for a long time, and then suddenly dropping and rolling round upon the back, upon which the animal lies for some time, and then starts up again; (sometimes severe dilatation of the pupils, wild incoherency of career, apparent loss of consciousness); obstinate and continued costiveness, and rapid loss of strength and condition; sometimes severe relaxation, the evacuations, consisting almost entirely of phlegm and blood, being very hot, evidently very painful, and gradually darker and more fetid; very quick, small pulse; the extremities and the muzzle cold; the flanks (very often), and the belly (constantly) very hot and tender of contact or pressure. *Pigs* affected with inflammation of the bowels (in addition to the colicky symptoms) are subject to a peculiar rotatory movement,* with oscillating and uncertain gait, and often severe convulsions. The general superficial symptoms do not materially differ from those exhibited by other animals. *Dogs* evince the following manifestations: great heat and extreme tenderness of the belly, the animal shrinking away with a deprecatory expression (but moving slowly, and with great caution, as if dreading the suffering occasioned by the slightest muscular action along the surface of the stomach), upon the least indication of intention to touch the parts; generally speaking, obstinate constipation, sometimes, however, sanguineous painful diarrhœa, either from the onset or following the costive stage; intense avidity in drinking cold water from burning parching thirst, with utter repugnance to solids of any kind; repeated and agonized yells; the development of two lateral cordiform ridges along the whole extent of the stomach, along which the animal cannot endure the slightest touch; the animal repeatedly turns its head towards the flanks, and utters a reiterated snapping shrill yell, or sometimes a prolonged groan; there is a fixed and vacant, but by no means savage cast of the eye; the animal slowly lifts its head on being approached, looks anxiously and wistfully at one, and howls plaintively as if imploring for relief.† *Cattle* (especially vigorous adult animals) are subject to the same disease, manifested by the following symptoms: the ordinary manifestations of fever and of organic inflammation, such as accelerated (even hurried) hard but generally small pulse, and becoming quickly more feeble; staring coat; listlessness and dryness of the muzzle, accompanied, however, with swelling of the left side of the belly, and extreme sensitiveness of the entire region of the stomach, and of the flanks; the pulse becomes more accelerated, smaller, and more wiry; rumination is suspended, and parching thirst succeeds to hunger; frequent and painful moaning; reluctance even to change position, and expression of severe anguish, if compelled to do so; hard, difficult straining, and evidently painful evacuations, more or less moistened externally by shining phlegm or even blood; very unfrequent and scanty evacuations, or subsequently the expulsion of a small quantity of liquid matter, generally very dark, and always very offensive, even to putridity, without the dislodgment of the concreted fæces which obstruct the terminal bowel, and which cease to be expelled at all; the flanks heave, the head is stretched forward, and somewhat *lowered* (not held out horizontally as in inflammations connected with respiratory apparatus); the mouth is hot and dry, and subsequently filled with frothy saliva; the ears and the roots of the horns are hot; the hind quarters vacillating, trembling, and tottering; rapid loss of strength, until the animal is unable to keep up, or to raise itself, having previously been unable to retain a recumbent position for an instant, though continually attempting it; the animal becomes unconscious and motionless after having been incessantly restless and shifting its position (putrid and bloody discharges sometimes supervene in the last and convulsive stage, and issue from the nostrils and mouth as well as from the anus); convulsive movements with grinding of the teeth; there is a thick yellowish coating on the tongue, and the urine is very turbid, of a dark brownish color, and emits a peculiar offensive and pungent odor; and life becomes extinct in the midst of frightful convulsions: occasionally, however, the animal sinks without the exhibition of this last effort. *With respect to the horse*, there is a distinction between two forms of the disease, which strikingly illustrates the error of allopathic measures and the immense superiority of homœopathic appliances. There is (1) inflammation of the external coats of the intestines (including the muscular as well as the membranous), which by the use of violent and drastic purgatives is often conveyed to the (2) inner lining membranes of those organs.* Inflammation of the external coats is distinguishable in its early stage by movements, &c., such as those attendant upon colic (which see), but in this instance, there is always constitutional disturbance, great restlessness, with great acceleration, smallness, and often feebleness of pulse; heat of the mouth, which is generally dry (at the onset especially); heat and redness of the nostrils; sometimes a shivering fit precedes the development of heat; the bowels are obstinately confined; the strength rapidly fails; the respiration is rapid and panting; the extremities cold, the ears the same; the region of the belly very tender of the touch, and in most cases characterized by considerable increase of heat (especially, if the muscular coat is involved, or is, particularly the seat of disease). Inflammation of the inner lining membranes of the intestines is produced by violent and continued purging (which sometimes succeeds to the previous costiveness with the use of violent aperients). In this case, the ears and extremities are generally warm; there is violent urging and straining, with frequent discharge of liquid, bubbling, frothy evacuation, sometimes discolored with blood; the pulse is much accelerated, but feebler than in the previous form of this disease; the movements of the animal, and its anxious glances towards the flanks, indicate severe pain; the inspiration is short; the expiration is momentarily checked or suspended, and is then effected with a groan.

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[*] In colic, motion, pressure, and friction of the parts afford relief; with inflammation, these conditions are invariably attended with aggravation; colic has intermissions; inflammation, like all inflammatory affections, is characterized by continuity of the symptoms.

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* An indication that the brain is more frequently affected by sympathy. We do not recollect any case of evident inflammation of the bowels amongst pigs which was not characterized by this symptom, which more or less attends the majority of the inflammatory disorders of this species.

† Some writers have described the howl uttered by a dog suffering from intestinal inflammation as identical with that of the rabid disease; but it is never the perfect bark succeeded by a howl, but either purely a howl (rather plaintive than harsh or savage), sometimes preceded by two or three short snapping yelps.

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* When our attention is called to cases which have been tampered with by allopathic hands, we should be doubly cautious in our discrimination of the symptoms.

Causes.—Amongst cattle, the most frequent cause is long-continued heat without rain, and when the pasture is parched up. Some writers consider it is occasionally epidemic: this is very problematical; it is much more probably endemic, owing to the presence of acrid plants, &c., and in particular localities; overluxuriance of food; want of sufficient fluid; or, on the other hand, very cold drinks when heated; or in very sultry weather, foul or pernicious waters, &c., may produce it. Very young and very old beasts seem not to be so subject to this disease, if at all. All animals may suffer from the disease in consequence of any of the causes which would induce colic, or from neglected colic, or constipation, or again, owing to the irritating nature of the food.

In horses inflammation of the intestines may occur as a sequel of colic, or it may arise from continued constipation, or from any of the many causes which induce indigestion, or from intussusceptio, or from the excessive action of a purgative. It may also be brought on by a day's overhard work, or by exposure to cold when the animal is sweating, or by hernia.

255. Treatment.—*Aconite:* This remedy will always be required in the first stages of inflammation of the bowels. It will be indicated by feverishness; restlessness; pulse quick and hard; mouth hot; thirst; anxious, distressed look; respiration labored and evidently painful.

Dose.—Ten drops in a little water every hour, or once in fifteen minutes if the symptoms are very pressing.

Belladonna.—This remedy may be given when Aconite has been administered for some hours, without much, if any, apparent advantage. Indicated particularly by fulness of the abdomen; tenderness on pressure; redness of the eyes and nose, and symptoms of severe pain. Belladonna may be alternated with Aconite with advantage in some cases.

Dose.—Ten drops every hour; four to six drops for the smaller domestic animals; and in cases of great distress and severity, the remedy may be given once in half an hour.

Arsenicum.—By some it is thought that this medicine should come next after Aconite. It is more especially indicated where the disease has been produced by cold drinks taken when the animal was sweating, or by some irregularity of diet. Particular symptoms of this remedy in enteritis are: great failure of strength; pulse almost imperceptible; cold mouth, and cold perspiration; anxiety; restlessness; retching and vomiting; diarrhœa; chilliness of the legs and ears.

Dose.—Ten drops once in one or two hours. With this, as with all other medicines, and in all other diseases as well as in this, the doses should be given at longer intervals as the patient improves.

Mercurius.—This remedy will be required when the disease involves also the submucous, muscular tissues of the bowels, as shown by the severe straining or tenesmus. Such cases, especially where the lower portion of the bowel is affected, run into the disorder subsequently described under the name of dysentery. Mercurius will be indicated by great thirst; tenderness of the belly; watery offensive evacuations, with more or less urging or straining; the evacuations are slimy and mixed with blood, and are evidently very painful; prostration of strength; shivering; perspiration.

Great relief of the pain and fever may be obtained by constantly fomenting the belly with warm water,—as hot as can be borne by the hand of the attendant.

Bryonia will be needed in cases which involve the peritoneum, or external covering of the bowels, causing what is termed peritonitis; this state of things will be indicated by *swelling* and increasing tenderness of the abdomen.

Dose.—Ten drops of the diluted remedy should be thoroughly mixed in one pint of water, and a wineglassful given every hour, till the violence of the symptoms is abated, then once in two or three hours. If the medicine is thoroughly shaken in a pint or larger bottle, these smaller portions of the mixture, often repeated, will exert a more salutary influence than if the whole ten drops had been given at once. The animal should be kept as quiet as possible; gruel only should be given for food, and water for drink; taking care, in the case of horses especially, not to allow an inordinate quantity to be drank at once. In cases of suspected constipation, injections of warm water may be thrown into the bowels. And even when there are no fecal accumulations, warm enemas, such as milk and water, or thin gruel, are very soothing when gently introduced into the rectum. But care should be taken not to increase the irritation of the patient in this way.

256. Peritonitis.—Under the head of Inflammation of the Bowels, or Enteritis, we have described an acute disease or inflammation of the *mucous* and *muscular* lining and tissue of the intestines. Peritonitis consists in inflammation of the serous or outer membrane of the bowels, that which supports and holds them together. This affection is much less common than enteritis, and much more critical and dangerous. This is partly due to the great extent of the serous membrane, which lines the whole abdominal cavity, being reflected back so as to inclose both stomach and intestines; and partly due to the peculiar nature of this tissue, from which inflammation arising in any one portion is quickly spread, like fire, over all the other parts of it.

Peritonitis is most usually caused by an external wound, as of a stake piercing the abdomen, or by taking cold after castration; more rarely by straining in galloping or leaping. It is distinguished from colic by the entire absence of intervals of ease, and by the presence of acute fever; from enteritis it is distinguished by greater tenderness of the posterior portion of the belly and by a more fully developed swelling; this latter symptom greatly interfering with the breathing, from the intense pain produced by every movement of the belly, even the slightest. In peritonitis the fever runs very high, and the disorder takes a very rapid course, terminating its first stage in effusion, as in pleurisy, which is a similar disorder of the serous membrane that envelops the lungs and lines the thorax.

Horses are most apt to be attacked with peritonitis; dogs come next in order; while oxen and sheep are said to bear injuries of the belly with impunity. When this disorder arises from rupture of the stomach or bowels, it cannot but end fatally. When it follows castration, death may result in five or six days after the operation.

257. Treatment.—Large cloths of several thicknesses wrung out in hot water, but not made too dry, should be placed over the belly, and kept in place by outside blankets and girths. In severe cases these should be removed at least every hour, and they will exert a powerful influence, co-operating with the medicine, to remove the inflammation. What is to be done, must be done quickly, for the disease runs so rapid a course that no time is to be lost. The indications for remedies, as well as the remedies themselves, are very similar to those required in inflammation of the bowels.

Aconite is indicated at the commencement of the attack, for shivering, scanty urine, restlessness, followed by quick pulse and breathing, and general febrile excitement.

Belladonna is required for tenderness and distension of the belly; quick, short, distressed breathing; and for symptoms of bellyache.

Bryonia is suitable when there are confined bowels; scanty urine; anxious, hurried breathing; and swelling of the sheath, breast, &c.

When dropsical effusion has taken place, Bryonia will still be indicated; it may be then given in alternation with Arsenicum, especially as the resulting symptoms can hardly fail to point to this latter remedy.

Cantharis.—When blood is discharged from the bladder.

Mercurius is indicated for tenderness of the belly to outward pressure; retching and vomiting, &c.

Arsenicum is indicated at the first, when the animal is seized with great debility, and the strength seems to fail perceptibly; also for all the symptoms which are met with in the last stage; such as weak and small pulse; great weakness; and also when the pain suddenly subsides, cold sweats break out, and the pulse becomes almost imperceptible—symptoms which are almost invariably the precursors of death. Swelling of the sheath and breast, and scanty urine, are additional symptoms.

Dose.—For horses and other large animals, give ten drops; for sheep and pigs, six drops; for dogs, four drops; the medicine should be repeated every two or three hours till the violence of the symptoms is abated, then once in four hours.

258. Diarrhœa in Horses.—The frequent discharge of liquid excrement, uncolored by blood, which constitutes diarrhœa, is a very frequent symptom of disease. "Washy" animals—those with narrow loins and great width between the ribs and haunch bone—are peculiarly subject to it; some horses without this make are constitutionally predisposed to it; hunters, excited with going to hounds, are often troubled with it. Change of diet, bad or improper food, often induce it, especially in association with overwork. Superpurgation is the result of giving purges in too large doses, or too frequently—a practice much less common nowadays than in past years, and one that killed many a horse. Purging also arises towards the end of influenza, and other diseases attended with prostration, and is a constant symptom of disordered liver.

The evacuations are passed frequently, with straining, and discharge of wind. There are often indications of bellyache; such as uneasiness, looking round to the flank, pawing the ground, rolling over, &c. When digestion is imperfect, the oats are passed undigested. The discharges are offensive, and mixed with more or less of slime. In bad cases, diarrhœa is a dangerous disorder in the horse, and may destroy life. This event may be apprehended when the legs are cold; the surface covered with cold sweats; the breathing quickened; the pulse small and weak; the appetite gone; the strength rapidly reduced; and the flesh wasted away.

In oxen, diarrhœa is a frequent symptom of the lung disease and rinderpest. It is very common when the diet is changed, and when cattle are turned into new grass pastures. Sucking calves often have the "white scour," from the milk they drink resisting digestion, and passing out curdled; it then acts as an irritant on the bowels. Lambs are likewise subject to this form of purging when they are suckling, and to another form arising from eating too rich grass in spring.

In the dog, the causes of diarrhœa are much the same as in other animals. Two forms are met with—the acute and the chronic.

The *acute* state may be preceded or accompanied by colicky sufferings; acrid, offensive matter is thrown up from the stomach; the vomiting, which is an early symptom, is often persistent and difficult to subdue; the vomit is not relished as a meal, as is the dog's custom; the pulse is somewhat accelerated; the thirst constant and urgent; and the belly slightly tender to the touch. The discharges are voided without much or any effort, and for a brief time relieve the dog's uneasiness. The evacuations are at first feculent, but soon become looser, more watery, more scanty, and more mucous—the strength decreasing in proportion as the discharges are more frequent and more profuse. The frequency varies according to various circumstances, which need not be dwelt upon. Their character, as regards color, consistence, smell, &c., vary according to the primary cause, the duration of the disorder, &c.; and it is not unusual to observe bile, mucus, and fæces in the same evacuation. When the disease is about to terminate in death, blood in some cases issues from one end, or from both ends of the intestinal canal; but in the majority of cases exhaustion, preceded by cold mouth and unconsciousness, closes the scene.

In the pig, the symptoms of diarrhœa are not different from those above described.

259. Treatment.—*Bryonia* should be given when the purging arises from drinking cold water, or being exposed to sudden changes of temperature, whereby perspiration is checked, and a chill received; where the evacuations are very fluid, and passed almost involuntarily; when they contain undigested food, curdled milk, &c.; when it seems likely that drinking impure water, containing vegetable matter, as on moors or marshes, has excited the attack; and when eating and drinking bring on purging.

Arsenicum is indicated when the diarrhœa is attended by violent pain in the bowels, as may be inferred from the animal's conduct; when the discharge is watery, slimy, greenish, or brownish; and when the animal becomes depressed, weak, thin, and does not eat; especially when the disorder is caused by cold drinks or unsuitable food.

Pulsatilla will often succeed when Arsenicum seems indicated, but fails; one of the principal remedies for diarrhœa in calves.

Mercurius is suitable for cases attended with straining efforts, and (in dogs especially) protrusion of the bowel at the anus; when the motions are slimy, frothy, dark, and offensive, and mixed with bile and perhaps with streaks of blood; when there are retching and vomiting (particularly in dogs), &c.

China is a valuable remedy for the chronic form of diarrhœa, especially if the discharge is not accompanied by pain; when there is loss of appetite, failure of strength, and wasting, intermittent diarrhœa.

Nux vomica is indicated when the diarrhœa is attended with symptoms of indigestion, as mentioned in No. 246; and when purging alternates with constipation.

Colocynthis is required in those cases of violent colic which are sometimes attended with looseness, and in cases approaching dysentery, with violent pain, evacuations of slimy, sanguinolent mucus.

Aconite.—Diarrhœa accompanying acute inflammation of the intestines, or when the disease has lasted for some time, and an apparent calm comes on, during which the animal's legs and feet become deadly cold, the skin cold and clammy, the mouth cold, and the eyes, which were before depicted with anxiety, now become sunken, and the pulse imperceptible, it is proof that the inflammation has degenerated into gangrene, and that death is not far off. Aconite may be given in such cases every ten minutes, for half an hour, and once in half an hour, when reaction appears. For the remaining symptoms, or if Aconite fail, *Arsenicum* should be given once in one, two, or three hours.

In pigs, diarrhœa after sudden exposure to cold.

Sulphur.—This remedy is of service when the purging is attended with eruptions, as is often the case in dogs, and when the milk disagrees and is the cause of looseness, as in sucking calves and lambs.

Pulsatilla.—In calves, diarrhœa accompanied with emaciation and loss of appetite; very often of a dysenteric character; the animal every moment passes liquid matter of a greenish or yellowish color. Consult in the Materia Medica, *Chamomilla*. Pulsatilla never fails to cure diarrhœa in lambs which depends on bad quality of the mother's milk. Sulphur should at the same time be given to the mother.

Antimonium crudum.—Diarrhœa with loss of appetite, in pigs.

Rheum.—Chronic diarrhœa in pigs; a specific for frequent evacuations without pain.

Chamomilla.—Often indicated in diarrhœa of dogs which results from cold.

Consult in the Materia Medica, also, the following named remedies: *Rhus tox.*, *Spigelia*, in diarrhœa from worms; *Carbo veg.*, *Ipecacuanha*, and *Nux vomica.*

Dose.—Ten drops for a horse, six for sheep and swine, four for calves and lambs. These doses may be given at once on the tongue, or mixed with a little water; or when many doses would be needed it is better to mix thoroughly these drops of the selected remedy in one pint of water by shaking it up powerfully in a bottle of still larger size; then give doses of a wineglassful, two tablespoonfuls or one, or one teaspoonful, once in three or four hours, according to the size of the animal and the severity of the case; taking care to give the doses further apart as the improvement appears, or stop the medicine altogether till a return of the disorder.

Diet.—Gruel (starch), and that made with flour, are suitable for drinks; ground rice, mixed with beef tea, is advised for dogs.

260. Dysentery is easily distinguishable amongst sheep, with a little attention, from the peculiarly sticky nature of the evacuations, arising from the preponderance of glutinous phlegm in the fæces; the evacuations, therefore, become agglomerated on the wool about the anus and thighs, and sometimes even the tail adheres firmly to the body, and effectually impedes the passage; or, if the animal should succeed in detaching the tail, laceration or sores supervene; the appetite is subject to much variation, sometimes being increased, sometimes unaltered, and sometimes, also, much impaired, if not destroyed. The earliest symptoms of dysentery are invariably attended with more or less febrile action, because it is essentially an inflammatory affection, involving the larger intestines; the attenuation and emaciation of the animal are extraordinarily rapid, and the flanks become literally shrivelled. Dysentery is a disease which is occasionally extraordinarily rapid in the destruction of life, and which sometimes, also, assumes a sluggish and chronic character, but which is always peculiarly intractable. Amongst cattle dysentery is of two kinds, acute and chronic; and may again be divided into three distinct stages, viz.: 1. The incipient stage, in which sometimes costiveness precedes the purging, whereas, in other cases, the purging will be manifested from the first apparent onset of the disease. If there be constipation, more or less intractable, we shall observe evacuations of a hard, dry, and knotty character, which are also broken, interrupted, and scanty; whereas, if purging prevail, there will be continual straining, sometimes attended with protrusion of the intestine, or occasionally, also, with movements indicative of griping pains, of the nature of colic; sometimes, also, the more frequent discharge, attended with deterioration of appetite, dulness, and loss of flesh, are the only incipient indications; the skin and coat will be rough, dry, and harsh; more or less uneasiness will be manifested by the animal, which will manifest signs of suffering upon pressure of the loins, and will sometimes actually shrink from contact; the milk becomes suppressed, a circumstance which may not only be a symptom, but also the cause of dysentery. 2. The inflammatory stage, in which the evacuations are suddenly and violently expelled and spirted out; the evacuations becoming more frequent, and consisting of a greater proportion of adhesive phlegm, which becomes stringy, adheres to the adjacent parts, forming into thick incrustations, and exhibits a thread-like appearance, clinging, in sticky strings, to the anus and adjacent parts; the appetite and condition now more distinctly fail. This stage sometimes assumes a stationary or chronic character, with apparent but very deceptive indications of returning health; the very intermittency (or occasional recurrence of severer symptoms) being a serious circumstance. 3. The debilitated stage, in which an admixture of blood first appears in the excrement, soon followed by a preponderance of thoroughly putrid (or very offensive) matter, indicative of decomposition; the flesh becomes completely absorbed in the process of decay; glandular swellings are manifested beneath the nether jaw; cold sweats prevail; loathsome insects appear upon the body, spontaneously generated; ulceration sets in about the anus; the teeth are loose; and the eyes are filmy and hollow.

In horses inflammation existing in and confined to the mucous membrane or internal lining of the intestines, produces the disease known as dysentery. This disease, though common in man, is very rare in the horse. It is totally distinct in its origin and nature from peritonitis and enteritis, and is easily known by the excessive purging which accompanies it.

The usual symptoms are: pulse small and quick; breathing quickened; great thirst; no appetite: frequent efforts to relieve the bowel, often without success, attended with symptoms indicative of pain in the belly; the straining is so severe sometimes as to force out the end of the rectum a short distance; the discharges consist of excrement coated over with congealed blood, of slimy múcus mixed with dark blood, and of lymph—in the latter case presenting a fatty appearance, and hence the old name given by the farriers "molten grease," from a notion that the fat of the body was melted down and then ejected by the bowels. If the disease continues unchecked, the horse becomes exhausted, very weak, and greatly wasted.

Causes.—Deficiency of food, overfeeding, and unwholesome food; swampy pastures or pastures which have been recently under water; excessive and protracted milking, or sudden drying off or suppression of the milk (of cows); the duration of close, oppressive, dry, or sultry weather; the suppression of catarrh may induce dysentery; the retrocession or imperfect development of an eruptive disorder, and, not unfrequently, want of proper attention to the cow after calving, &c., &c.; associated with other diseases, such as murrain, dysentery is ever a most critical symptom.

261. Treatment—*Aconite* is frequently useful at the outset of the attack, when the pulse is quickened, the mouth hot, &c.; and when there are indications of pain in the belly.

Mercurius corrosivus is specially adapted for those cases which are characterized by severe straining; protrusion of the end of the bowel; discharge of pure blood, or of slimy mucus mixed with blood, and of hardened excrement; frequent urgings to relieve the bowel; symptoms of bellyache before, during, and after each action.

Mercurius vivus is the chief remedy for this disease when it occurs under an epidemic form—a thing which is not unusual in spring and at the commencement of summer, when very warm days alternate with cold nights. This remedy is specially indicated when the gums are pale and spongy, the teeth loose, the saliva from the mouth viscid and fetid, when there are frequent efforts to empty the bowels with a discharge of fetid wind, and scanty dejections mixed with mucus, which presently assume a greenish gray, or a brown tint, or which, accompanied with mucus and blood, pass away in a liquid form after great efforts; the belly is swollen and painful to the touch, as also the lumbar region; the rectum projects outside the anus; it becomes much inflated and extremely sensitive.

Colocynthis is more particularly indicated when the belly is distended and the seat of severe colicky pains, which are very violent and come in paroxysms; when the motions are slimy and streaked or mixed with blood; and when the animal is restless and occasionally shivers.

Ipecacuanha may sometimes be serviceable when the evacuations consist chiefly of slimy mucus, with or without admixture with flakes of lymphy matter.

Acidum phosphoricum should be tried after *Mercurius* and *Colocynthis*, if the discharge of blood continues.

Arsenicum.—Evacuations liquid, and of a greenish color; the discharge is offensive, and passed almost involuntarily; there are great weakness, wasting and dulness, entire loss of appetite.

Dose.—Ten drops of the selected remedy may be mixed thoroughly in one pint of water, as previously directed; of this give, according to the size of the animal, and intensity of the symptoms, one or two tablespoonfuls, or one or two teaspoonfuls, once in three or four hours. In the most violent cases, several drops of Aconite may be given for a single dose, mixed in a tablespoonful of water. In many instances after the first few doses of Aconite, repeated according to the intensity of the symptoms, *Mercurius* (either the Merc. vivus or the Merc. corrosivus) may be given in alternation with the Aconite, a dose once in two or three hours. Oftentimes, however, unless the fever is quite high, Mercurius alone will remove all the difficulty.

A few doses of *Sulphur*, ten drops every morning, when convalescence is pretty well established, will aid in the restoration of appetite, digestion, and strength.

The diet should be light and unirritating; but solid food in preference to that which is fluid.

262. **Protrusion of the Intestine** very commonly occurs amongst pigs, costiveness being the most probable cause of the affection, and unless there be severe rupture will speedily yield to the remedies indicated below.

263. **Intestinal Rupture** will occasionally occur amongst all animals, but it is apparently of more frequent occurrence amongst cattle (chiefly occasioned by external lesion, such as a blow, often from the

worm (Ascaris vermicularis), the former in the small, the latter in the large intestines; both are frequently discoverable in the evacuations, and in very considerable quantities; the tapeworm may also be numbered amongst the worms to which the horse is subject. To these must be added the Strongylus, a slender worm, measuring from two to four inches in length, and consisting of a rounded body for half its length with a contracted threadlike head. These are found in the large intestines; and the bots. But these latter require a more particular description.

Bots are the larvæ or grubs of the Œstrus or Gad-fly. The eggs are deposited on the legs, arms, knees, or body of the horse during the autumn, and are licked off by the animal and hatched in the stomach, to the cuticular coat of which they cling by two strong hooks or tenacula. Their heads, which are situated between these hooks, are buried in the lining of the stomach. They often adhere so tenaciously, that their bodies may be broken, before they will quit their hold. They are sometimes found in the villous coat, and they but rarely extend into the duodenum. The mucus of the stomach seems to be their food.

About June or July the bots are often voided in the dung, and they then assume the chrysalis or grub form, and remain so for a few weeks, when the case opens, and the fly takes wing. Bots, when being voided, often adhere by their tenacula to the fundament. There are several species, but it is not necessary here to describe them.

Their presence does not seem usually to act injuriously on the health of the horse, though occasionally the stomach is eroded by them. When they are seen in the dung, they are usually undergoing the natural process of being voided before their transformation; and if we have patience, nature will quietly expel them without our aid. At this period, a dose of physic may perhaps hasten the loosening of their hold; but we cannot make them quit their tenement much before nature disposes them to do so, inasmuch as their bodies are hard and insensible to the action of any medicine, and their heads are enveloped in the lining of the stomach. One case also has occurred in which the long tapeworm was discovered (Tænia solium).

Pigs are subject to several varieties of worms, which multiply enormously in this animal, and which often become an insuperable impediment to the fattening of pigs, as well as rendering them inordinate and unprofitable feeders.

Dogs also generate several varieties, but chiefly the roundworm, threadworm, and tapeworm.* A dog affected with worms in the bowels is usually dull and depressed, uneasy and restless, utters doleful cries and howls, and becomes unsociable in disposition and irritable in temper. The hair is dry, shaggy, foul, and destitute of the natural gloss; appetite variable, and often ravenous; the breath offensive; and the nose dry and hot. Notwithstanding the greedy appetite, emaciation and weakness come on. Attacks of diarrhœa occasionally alternate with constipation; small lumps of mucus are voided, and little bits of excrement. Paroxysms of colic are frequent; fits attack young dogs especially. A tense and enlarged state of the belly, and a short, dry, irritable cough, are also occasionally symptomatic of worms. The "mawworm" induces intolerable itching of the rectum, but rarely any of the more serious symptoms as above. Chobart records having seen many dogs vomit balls of Ascarides (*Strongylus trigonocephalus?*). These dogs had vertigo, convulsions, and coma, &c. The "roundworm" sometimes crawls into the stomach, and even upwards into the nostrils, and then sets up great irritation. The severe symptoms are produced only by the tæniæ, or when the other worms are present in large numbers.

Symptoms.—We are often first informed of the presence of these parasitic insects by observing them in the excrement; but in general, if we observe progressive loss of flesh, and condition, and general flaccidity; strange and sudden variations from costiveness to excessive relaxation, &c., and *vice versâ;* constant hacking, dry, interrupted cough; in some animals (especially when young), frequent and unaccountable fits; evident and continual irritation about the terminal bowel and orifice; restlessness, irritability (sometimes savageness), all of which continue for a long time without permanently affecting the color of the membranes, the pulse, or the respiration, with occasional irritative fever which does not assume a severer character, and attended with continual voracious appetite (whereas, the best of food does not improve the condition), with a sunken down appearance, we may conclude that the presence of worms in the intestines is the cause of these manifestations. Another sign of worms, in the horse, is said to be his depressing the lower lip.

266. Treatment.—There are two modes of treating animals affected by worms: one is based upon the supposition that they are foreign and injurious substances requiring in the first instance to be removed; the other founded on the belief that they are always the product of latent *psora*, or constitutional disorder. Dr. James Moore is a prominent advocate for the former method. His treatment is the following:

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* It does not appear that much attention has been paid to this subject; few writers acknowledge the tapeworm as existing among horses, and then only as a very rare occurrence; we believe that they occur much more frequently than is supposed.

"In the treatment of worm cases we must, firstly, destroy and expel the worms; and, secondly, give such medicines as will improve the mucous membrane of the bowels and its secretions.

"For the horse, as a mechanical evacuant, give two Croton beans powdered and mixed with a handful of bran mash. Then for the symptoms above described as the result of worms give one grain of *Arsenicum*, first trituration, night and morning in a little mash; or, this failing to do decided good after having been administered for two or three weeks, *Ferri sulphas*, in the same way, in five-grain doses.

"For oxen, as an evacuant and as a poison to the tapeworms, *Turpentine*, half an ounce mixed with Olive oil; and as constitutional remedies *Arsenicum* and *Ferri sulphas*, as for the horse.

"In sheep and pigs give half these quantities.

"In dogs, powdered *Areca nut*, two grains for each pound of the dog's weight mixed with oatmeal gruel, is one of the best for tapeworm. It may be given in this way once a week for several weeks with the best effect. If necessary, from two to five-drop doses of *Arsenicum*, or of *Ferri sulphas*, may be given night and morning afterwards. *Cina* is also good against round and mawworms.

"The operation of the evacuant medicines should be watched, and tapeworm when expelled either whole or in pieces, should be burned or deeply buried."

Such is the method proposed by Dr. Moore. With respect to the *tapeworms*, it may be here remarked that all efforts to expel them will prove futile, unless the head also is brought away. Pumpkin-seeds have proved effective in many cases in the human subject; they should be roughly mashed and given freely three times a day for several days.

Filix mas is, however, the most efficient remedy against tapeworm; half an ounce of the saturated decoction of the *Male fern* should be given early in the morning and last thing at night. As this disorder is comparatively very rare, this remedy is not put up in the box of medicines accompanying this book; but it can be procured at any time when needed, in the form of saturated tincture, from the publishers of this book, or from any other homœopathic pharmaceutist. And the same may be said of the first trituration of Arsenicum and Ferri sulphas advised by Dr. Moore.

Filix mas in six-drop doses of the mother tincture may also be suitable for the tapeworm which is sometimes found in the intestines of sucking lambs.

267. **Bots**, next to tapeworm, if not before it, occasion the severest symptoms; the latter is often slowly destructive, while the former by attacking the substance (muscular tissue) of the intestines may prove quickly fatal. We have seen in a young horse, that died as was at first supposed of *horse-ail*, or putrid catarrh of the head, the entrails perforated in hundreds of places, just riddled by these industrious insects. This was in December, and the animal had taken a violent cold from being allowed to drink his fill of ice-water when perspiring freely.

Bots sometimes leave hold of their proper food of the mucous or insensible coating of the bowel and begin to feed upon the sensitive muscular tissues of the intestines. The animal is thrown into the greatest agony, and appears as if suffering from a violent attack of colic. Many horses are believed to have been lost through improper treatment in such cases. The first thing to do when the bots thus threaten to destroy life by perforating the bowels, is to get them to release their hold. This is done by pouring down the beast's throat half a gallon or more of warm milk; still more effectual, although not quite so easy to procure, is fresh warm blood. When such rich food in such abundance comes in their way, the bots leave their hold on the intestines and begin to gorge themselves with the new supply. Then, directly the horse is relieved from his agony, a quart (or even a pint) of Olive oil should be administered, which will presently bring away the milk (or blood) and insects all together. It is in the early part of the winter that the bots are said to be the most apt to become dangerous in this way. And the tendency to such dangerous attacks will be much increased and made into a certainty by such imprudence as was above described. In the ordinary state of health of the horse, the bots may be comparatively harmless.

China and **Nux vomica** have been recommended for the colics which the insects cause.

China, **Cina**, **Mercurius**, and **Sulphur** are advised for the *lumbrici*, or roundworms.

Digitalis and **Ignatia** are advised for the *ascarides* (*pinworms* in the human subject) which inhabit the large intestine; retraction of the flanks, in horses, is said to be almost the only sign announcing their presence. *China* and *Sulphur*, in repeated doses, are recommended for these insects in cattle.

Graphites, Petroleum, Magnesia murias, Stannum, and **Sulphur** are recommended for the *Strongylus,* which, when first evacuated, appears partly black and partly transparent.

Alumina.—Indicated in vermiculous cases, where constipation alternates with diarrhœa.

Magnesia murias.—When the constipation returns periodically.

Sepia.—When the alvine dejections are preceded and followed by retraction of the flanks.

Cina.—One of the most important remedies, indicated by irregular appetite, at one time poor, at another voracious; by bloating of the abdomen, grinding of the teeth, discharge of lumbrici, and ascarides.

Many other remedies may be indicated, but it is needless to attempt to give their particular indications. Consult the Materia Medica, and select, according to the condition of the patient, one or another of the following: Arsenicum, Calcarea, Graphites, Mercurius, Nux vomica, Silicea, Sabina (for cattle), and Sulphur.

Dose.—The selected remedy should be given night and morning in quantities suited, as often already laid down, to the size of the patient.

268. Concretions—Dust- and Hair-Balls.—*In Horses:* A small pebble, or other foreign body, when accidentally swallowed, is often found to be the centre of deposits of earthy matter, leading to the formation of stones, which vary greatly in size. These hard earthy stones are occasionally found in the horse's stomach, but more frequently in some part of the large intestine. They are met with oftener in some districts than in others—owing probably to the larger amount of calcareous matter in the water drunk.

The dust-ball is composed of oats, the dust of oats or barley used as food, and mucous material mixed up and matted together. They often acquire a very large size, and there are often several of them in the same horse. They begin to be formed in the stomach around any body that will act as a centre-point for deposits, and afterwards pass into the bowels.

In Oxen, Sheep, &c.—Hair-balls are very common in these animals. They consist of hair, thickened mucus, and other deposited matters, and begin from swallowing hair when the hide is licked. These usually remain in the stomach, and give rise to no particular symptoms. Besides stomach-stones, the dog is liable to have hair-balls in the bowels, as well as stony concretions formed around foreign bodies.

The balls often attain an immense size without causing any appreciable derangement of health. Usually, however, they set up obscure symptoms of general ill health; the animal gets thin, weak, and dul and has frequent attacks of colic. Towards the last, the bowels becom constantly costive, the belly swollen, the back arched upwards, and th breathing quickened. When attacks of pain come on, the eyes hav an anxious look, and, in the case of the horse, he sits on his haunche like a dog.

269. Treatment.—If it were possible to be sure of the existence o these stones, or concretions, when they are small, it would be comparatively easy and safe to expel them through the bowel by means of purge; but as this knowledge is wanting, and as the mass, when onc it has grown large enough to occasion serious inconvenience, cannot b made to pass along the bowel, nothing can be done but to attempt t give relief by treating the case with medicines suited to it as a coli This may help, while purgatives would only increase the distress an render the danger the more imminent. See remedies for "Colic."

270. Constipation.—In horses, costiveness occasionally occurs an becomes a cause of enteritis, or inflammation of the bowels. Sometime even the fæces become impacted, and require to be removed by the ai of laxative enemas, or possibly by hand. But careful attention to th condition of the horse on the part of the groom would discover suc want of proper action of the bowel before it became so far advanced.

Newly-born foals are very liable to costiveness of a dangerous character. The excrement existing in the bowel before the foal's birt cannot be discharged, and symptoms of severe colic come on.

Oxen are likewise occasionally the subjects of simple costiveness, an calves particularly so when first placed on dry food.

In all such cases, we find loss of appetite, uneasiness, indications o bellyache, straining efforts to relieve the bowels, and hardened excrement.

The dog's bowels naturally tend towards a costive condition, an this is favored by wrong food, and especially by that acquired restrain over the bowels which follows the cultivation of habits of cleanliness especially in house and pet dogs.

Indigestion, mange, foul breath, bad teeth, severe straining, accompanied with groaning and trembling, and colic, are the main symptoms

271. Treatment.—Horses should be regularly exercised, and be fe on boiled food, the quantity of oats being reduced for a time. Dog also should be exercised, and have well-boiled oatmeal gruel, and occa sionally bits of liver. In all animals, the diet should be carefully regulated according to the state of the evacuations. Injections of warm water and soap must be resorted to where the rectum or last portion of the bowel appears stuffed full, and to have lost in this way the power of expelling its contents. "Back-raking" the horse is not free from danger. In the smaller animals it may be necessary to scrape out the accumulation contained in the rectum. When colic arises, as if from a futile effort of nature to throw off these hard stools, which become sources of irritation, suitable remedies should be given, such as are indicated in colics of that kind, and the mechanical adjuvants just mentioned may be the more imperatively demanded.

Nux vomica and **Sulphur** will be found sufficient for most if not for all cases of constipation in horses and cattle. The former should be administered in ten-drop doses at night, the latter in similar doses in the morning.

Opium may be found useful for costiveness, especially in dogs, in addition to Nux vomica.

In addition to these, the following named remedies may be studied in the Materia Medica, selecting the medicine which most closely corresponds to the condition of the patient: Bryonia, Calcarea c., Carbo v., Graphites, Kali carb., Lycopodium, Sepia, and Silicea.

Or especially for costiveness with severe urging (additionally): Arnica, Belladonna, Causticum, Cocculus, Conium, Mercurius, and Natrum m.

For knotty evacuations (additionally): Ammonium carb., Baryta, Sulphuric acid, and Thuja.

For imperfect evacuations (additionally): China and Ruta.

For large, solid evacuations: Aurum, Ignatia, Veratrum, and Nux vomica.

SECTION III.

DISEASES AND CASUALTIES AFFECTING OR INCIDENTAL TO THE LIVER, ETC.

272. The Rot of Sheep.—This is a disease resulting in the most universal disorganization of the system; it consists, primarily, of obstruction of the biliary ducts—the fluke-worm (or *Fasciola hepatica*) being generated, and propagating in those passages—and consequent inflammation of the liver.

Causes.—The causes of rot may be traced more to the nature of the soil, and to the predominance of wet during an entire season, than to any other circumstance; on a deep, swampy, spongy, flat soil, ever saturated with water, or slow to dry, sheep will never be exempt from or secure against rot, except in very dry seasons; whereas sloping grounds, with a dry or very gravelly, percolating bottom, or dry, firm uplands, are rarely visited by this scourge.

Rot is most prevalent in low, damp, marshy, flooded pastures, with rank grasses. The eggs of the perfect worm are found abundantly in the sheep's liver; they pass along the gall-duct into the bowel and thence are discharged. They are washed into pools or brooks by rain, or fall on the grass; in either case, many die, whilst others are hatched. The embryos are eaten by mollusks, and the other inhabitants of pools, and sheep swallow the latter. The immature worm then reaches the liver of its host, where generative organs are developed, and eggs are laid for the next generation. Such is a brief sketch of the changes which these worms are believed to undergo.

Symptoms.—The earliest symptoms consist in the more rapid, unaccountable, and deceptive tendency to fatten, a false and treacherous improvement of condition, which, under any of the circumstances liable to engender rot, should be watched with suspicion. On closely examining the skin (if rot has begun to develop itself) beneath the wool, it will exhibit a yellowish hue; the small gland of the corner of the eye will be of a dirty yellow color; the minute vessels in the white of the eye (so brightly red in health) will exhibit the same tint, and the eye generally will have a muddy-yellow appearance; the animal appears dull, languid, and slow in movement, a symptom which increases as the tinge extends to the muzzle, mouth, tongue, nose, &c., when the treacherous, morbid fatness, suddenly falls away; the skin now exhibits a variegated appearance, with patches of yellow and very dark color interspersed over the surface; the breath is excessively offensive; the evacuations are alternately hard, difficult, scanty, or even suppressed, and very loose and colliquative (sometimes obstinately relaxed); the skin-crackles beneath pressure; the general heat becomes increased (fever often intense); there is, sometimes, dropsical swelling of the throat, close to the jaws; the gland of the corner of the eye is enlarged; the eyes become red and swollen; the skin is flabby, and the wool easily torn out by handfuls; there is great weakness, total suspension of appetite, dropsical swelling of the belly, &c., &c.

In Egypt, rot is very common, and it is not there confined to sheep, but it also attacks horses, bovine kind, and most of the lesser animals as well, and is very fatal to them, particularly so on the whole of the borderings of the Nile, the immense overflowings of which spread a frightful mortality among the numerous grazing tribes which browse on the plants affected by this overflow. The Arabs are reported to affirm that this pest annually destroys not less than sixteen thousand sheep. The acumen of these shepherds must be very great indeed, for we are told that the Arab shepherd readily distinguishes the sheep affected by rot from others, by the presence of a bag, full of water, found under the tongue.

In pigs, rot prevails sometimes and proves much more malignant than in sheep. It scarcely attacks any but the young, and it is very seldom that an old pig is affected with it. It appears but once during life. After the animal has passed some days in a state of depression and unwillingness to move about, the head hanging down, the ears thrown back, its bristles stare, and there are seen on different points of the skin, chiefly on the head, ears, on the fore part of the body, in the inner surface of the thighs, and on the belly, small red spots, which soon increase in size, and rise into a pustule full of serum; this pustule dries, and gradually falls, leaving behind it a small cicatrix, at the end of four or five days. This affection is particularly dangerous when it attacks the eyes, which become inflamed. When on the inner surface of the thighs, it causes the animal to limp. *Arsenicum* is the specific for it. When it does not clean the skin perfectly, recourse must be had to *Dulcamara.*

273. Treatment.—Remove all the flock to more wholesome pasturage, or feed them on dry food from the stable.

Arsenicum, sixth dilution, in six-drop doses, in alternation with *China*, in similar doses, has been found efficient in many cases. Afterwards *Bryonia* and *Veratrum* may be given, according to the symptoms.

Arsenicum and *Ferri sulphas* in alternation, thrice daily, are advised by Dr. Moore.

Acid muriaticum it has been thought would prove useful as a preservative.

Dulcamara has been recommended when there are worms in the lungs.

Natrum muriaticum, Calcarea, and **Antimonium crudum** may be studied in the Materia Medica, in addition to those named above. Whatever medicine of all these seems to be the best mode to correspond to the case should be given in ten- or six-drop doses once in four hours.

The treatment of this fatal disorder may comprise three distinct indications, which we mention in the inverse order of their appearance, 1st, to destroy the fully developed worms in the liver or other organs; 2d, to destroy the minute germs of the undeveloped worms; and 3d, to prevent the introduction of these germs into the system. With respect to the first indication it is doubtful if we have any means at command sufficient to secure this directly, and all medication directed towards the consequences of such a state of things would necessarily prove futile, while the cause remained in full operation. But it must be remembered that these minute insects, like all other small parasites, are very short-lived; therefore if means could be provided to stop the supply arising from the growth of the young, and development of embryotic germs, the race would quickly die out in the patient, and the hepatic disorder already established by their presence could easily be removed by appropriate medicines. The third indication is rather preventive than medical; and can be employed more or less successfully, in proportion as the animals can be entirely, or only in part, removed from danger of absorbing additional germs of this disease.

Carbolic acid, of which mention has already been made in connection with Glanders and the Rinderpest or Cattle Plague of America, can certainly be given in such doses as to destroy the minute germs of the flukes, *Fasciolæ hepaticæ*, &c., which infest not sheep alone, but cows, horses, asses, hogs, deer, hares, and rabbits.* It may indeed be doubted if this powerful acid and antiseptic could be introduced into the system in quantities sufficiently large to destroy the full-grown flukes, without at the same time injuriously affecting the patient. But this is not essential; for as we have just stated, if the development of the young, and growth of the germs can be prevented, the race will quickly perish in the affected animal.

Ten drops of the strong solution of *Carbolic acid* may be given to a full-sized sheep, less doses in proportion to smaller animals, three or even four times a day; the animal of course being removed from the possibility of receiving fresh germs into his system, by total change of diet, whether from a moist, damp (fresh-water) pasture to *salt marshes*—a very good change when practicable—or by stopping the class of fodder in the stable which may have contained the germs of these insects. Then the solution of Carbolic acid may be pushed, for some days at least, as far as it can be borne, without entirely destroying the appetite of the patient. After a few days, four or five at the outset, it may reasonably be presumed that these embryotic germs are destroyed; and the animal's symptoms should now be carefully collated with those contained in the Materia Medica, under the various names of medicines already given; particularly *China*, *Natrum muriaticum*, *Arsenicum*, and *Sulphur*, giving night and morning six drops of the selected remedy.

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* Blaine's "Outlines of the Veterinary Art," London, 1841, p. 357.

The following are the directions given in an English work, of whose very accurate descriptions of disease we freely avail ourselves; (the method we recommend, using the Carbolic acid, will be found to require less time, and we believe it to be much more certain). "For preventive purposes, the administration of the medicines should be repeated morning and evening for ten days after the removal of the sheep from the pasture or other place in which the rot has broken out. During the incipient stage the doses should be repeated every six hours for four days, and afterwards morning and evening for a week, or until the symptoms disappear. When the disease becomes confirmed, and high febrile action sets in, or critical symptoms supervene, the administration must be repeated every two hours until modification becomes apparent, and then every four hours until the symptoms decidedly yield.

"*Precautions* (without which treatment is of little avail).—Remove the sheep, whether sickened or healthy, if possible, to dry and upland soil, or provide artificially, as well as you are able, against the mischiefs of moisture, &c.

"*Regimen.*—No rank or succulent food; protection from undue moisture especially, and the food being as little irritating as possible."

It is believed that in this way, by immediately applying the *preventive method of treatment* to the rest of the flock, when one or more first begin to show signs of this disorder (by total change of diet), and by giving the Carbolic acid as above advised, the disease may be confined to the earliest cases, and they too may always be saved, if strictly attended to from the very first.

274. Inflammation of the Liver, and Jaundice or Yellows in Cattle.—These diseases are intimately connected, and are often, if not generally, only distinguishable the one from the other, by the greater or less degree of fever which occurs; and even this distinction does not hold good with regard to the ox, cow, &c., amongst which yellows assumes a very severe and inflammatory type. Amongst these animals, however (which, like all ruminants, are especially subject to diseases of the liver), yellows may be identified by the scaly, mangy eruption which attends it;—whereas it does not necessarily occur with simple inflammation of the liver (in which, even, intense and general yellowness of the skin is not a necessary symptom). Pigs are still less liable to diseases of the liver.

Causes.—Inflammation of the liver, and yellows, may appear as primary diseases, or as mere sympathetic affections, dependent upon acute inflammation of other organs. Obstruction of the biliary ducts is the most frequent cause of yellows (amongst cattle in particular), either by the presence of the flukeworm (as in the rot of sheep), or by the concretions called gallstones. Amongst the general causes may be numbered high stall-feeding; the abuse of purgatives, &c.; sudden chills, or being thoroughly wet when heated; any excessive and gross feeding; contusions, and the retrocession or imperfect development of eruptions; and overfatigue, produced by violent exertion, overdriving, &c., &c.

Symptoms.—The manifestation of these diseases is very analogous in all animals, and the general description may, with a few modifications consistent with the habits of the particular species, be applied to all. Inflammation of the liver is characterized by tenderness of the belly generally, but more particularly of the right side, evinced by the movements of the animal upon pressure; enlargement, with tensive hardness of the same parts; heaving of the flanks, accelerated, hard pulse, irregular, imperfect, indolent, or suspended rumination, heat of the mouth and breath; the roots of the horns are hot, and the muzzle dry; the urine is dark brownish or saffron-yellow (occasionally stained with blood), scanty and infrequent; the evacuations are dry, hard, difficult, and scanty (often almost black amongst cattle); the animal is continually observed to lie on one side; there is a peculiar undulation of the surface on the right side, occasionally, also, spasmodic movements supervene about the parts affected; the animal gazes wistfully, and with a pain-stricken expression, at the right side; with (sometimes, however, very little) yellowness of the skin, eyes, gums, and muzzle (preceding the strong development of fever), which, as the complaint advances, becomes brownish as regards the skin, and turgid red as regards the conjunctiva and interior of the mouth. Dogs are affected with severe vomiting of slimy, greenish-yellow matter; intense dryness of the tongue (common to all species), which protrudes from the mouth; and sometimes bloody or black vomits. They are restless, and prone to absolute seclusion in the early stage. All animals are affected with intense thirst, total repugnance to all food, staggering gait, and more or less rapid emaciation. The pulse is first quick, or hard and quick, then quick, hard, and full, or hard and quick, then very feeble and irregular, or intermittent and very small. Jaundice (yellows) is identified by the preceding symptoms, more or less distinctly developed, with either abrupt or slow and gradual development, increase and darkening yellowness of the skin, and of the surfaces throughout the body, as well as of the urine; sometimes these symptoms continue for some time without apparent constitutional disturbance, which supervenes with very similar symptoms to those already described, the yellowness being, however, doubly intense, and more universal, the hair of the animal becoming yellow, and the milk of cows being discolored, and becoming bitter and rancid, whilst a characteristic and extreme irritation of the skin, with a scurfy, scaly eruption, very analogous to that of mange supervenes, whereas the extreme costiveness, as already described, is apt to be followed by no less intractable looseness.

In the Horse.—The liver, though subject to frequent derangement in man, and also in some of the lower animals, is comparatively seldom diseased functionally or organically in the horse.

Its diseases may be divided into two classes, namely, temporary functional derangements, such as inactivity, congestion, and inflammation; and, secondly, organic structural changes, such as enlargement, atrophy, softening, and induration. The first named ordinarily result from preventible causes, such as excess of food, want of proper exercise, or exposure to vicissitudes of temperature or weather. The latter are seldom primary affections; but as a general rule result from other diseases, such as influenza, inflammation of the lungs and pleuræ, &c.

Inactivity, often followed by congestion, is frequently caused by excess of food, especially if it be of a stimulating character, combined with insufficient exercise. The liver becomes loaded with bile, and this condition is afterwards succeeded by a diminution of the quantity of this secretion formed in the hepatic cells. This is in conformity with the usual rule of nature, that when any organ is put to excessive use for a time, reaction follows. The horse then becomes hide-bound and debilitated. In many cases the appetite falls off, but in others the patient may feed even ravenously. He will not, however, thrive until the organ is again stimulated to proper action. Congestion may also be brought on by a sudden chill or exposure.

A state of passive congestion may exist for a length of time without any very noticeable symptoms. On the other hand, inflammation may supervene on the congestion, whether arising from previous inactivity, or from chill, or exposure. In very acute cases the period of congestion may be so short as to escape notice.

Slight derangement of the liver is often indicated by irregularity of the appetite. The animal feeds well one day and will not feed the next.

The skin is rough, dry, harsh, and itchy, and the mucous membranes are yellowish in color, owing to retention in the blood of the material which should have been formed into bile, or from reabsorption of the bile due to some obstruction in its proper channel.

If the slight symptoms indicated above are neglected, and the derangement is allowed to continue for a length of time, or in other cases without any such premonitory symptoms, congestion (often followed by inflammation) may take place in the organ.

The attack, however, *generally* comes on gradually. The animal is dull and indisposed to move; the appetite fails and the bowels become disordered; the eye and mucous membranes assume a more decidedly yellowish tint; and the fæces are hard, scanty, light-colored, and fetid. Great uneasiness is evinced on the application of pressure to the right hypochondriac region. The breathing in general is not much affected, but there are frequent fits of blowing, and there is also a hollow cough. The pulse is full, soft, and compressible. The tenderness arising from a diseased state of the liver often causes the animal to favor his right fore leg in action.

If the congestion runs into inflammation, the pulse will become hard, quick, and small. The pain is not great, because the parts are soft and capable of swelling.

If the attack is not checked, the fæces usually become clay-like in color and consistency. The dryness, itchiness, and yellow tint of the skin increase, and the unhealthy, rough, and staring appearance of the coat is more marked. The glands about the throat and other parts of the body sometimes become enlarged. The animal rapidly loses condition. Occasionally severe diarrhœa supervenes and complicates the symptoms. Ascites, or dropsy of the belly, is a common sequel of the attack.

The liver is also occasionally, though but rarely, subject to *sudden acute* attacks of inflammation. This disease is known as Acute Hepatitis.

The horse becomes dull and moping, and probably coughs occasionally. He hangs his head, his eye droops, and he loathes his food. He seems to suffer from inward pain, but not of a severe kind. He has not lain down during the previous night, the dung-balls are small and dark-colored, the urine is scanty, the mouth is hot, and the animal is feverish. The fever runs on, and the inner side of the lips, cheeks, tongue, and the mucous membranes of the nose and eyes are tinged with a yellow color. If blood be abstracted, the serum will be of a golden hue. The dung-balls are tinged or perhaps deeply stained with bile, and often incased in viscid mucous matter. The urine is of a yellow color with a copious sediment. The patient lies down occasionally, looks at his side, and rises again. If the right side be pressed upon, he will flinch, or perhaps bite and show signs of tenderness.

The pulse becomes quick, strong, and bounding; the breathing is disturbed and short. The patient appears dull and stupid, and often sinks into a lethargic state, or he may stagger in his walk.

In either of these attacks, if the symptoms are not soon relieved, the case may end in rupture of the liver.

Organic disease of the liver rarely occurs as a primary affection. It is usually a sequel of other diseases, especially of any diseases which prevent the free circulation of the blood through it.

A state of hyperæmial congestion, or undue accumulation of blood in the capillary vessels, is the usual commencement of almost all structural disease. This congestion may arise from any affection which interferes with the passage of the blood into the pulmonary artery, such, for instance, as inflammation of the lungs or pleura, influenza, peritonitis, any violent visceral inflammation, valvular disease of the heart, or disease of the pericardium. Enlargement of the liver to a great size, and softening of its structure, often follows low typhoid affections. It is also common in old cart horses.

On the other hand, atrophy sometimes occurs, and the organ dwindles down to half its proper size.

In some cases the liver takes on a scirrhous or indurated state, and ceases in a great measure to perform its functions.

Ordinary congestion of the liver, especially when it has become chronic, sometimes leads to enlargement and softening of the organ, known as hypertrophy of the liver. It is most often seen in very fat horses, such for instance as brewers' and millers', or in pampered animals, such as gentlemen's carriage horses, which have not sufficient exercise. The liver slowly and gradually augments in size, sometimes with no sign of ill-health about the animal, until it suddenly bursts its capsule, and death soon follows.

The liver may also become the seat of tubercular and cancerous deposits. The bile-ducts may likewise be obstructed by calculi, when the same symptoms are evinced as in congestion and inflammation.

The existence of any such organic change, though its exact nature may not be discoverable during life, is indicated—but often only very obscurely—by the same symptoms as those previously described under the head of temporary functional derangements.

Accidents, such as a heavy fall on one side, may occasion rupture of the organ, when death will rapidly ensue.

progress, and when typhoid symptoms are appearing, such as vomiting; offensive, blackish diarrhœa; cold legs; great prostration; weak, small, irregular pulse. It is also suitable in the chronic form of hepatitis, when the liver is enlarged, the urine scanty, and dropsy of the belly present; or when the disease occurs in consequence of some previous disorder, and especially when it results from miasmatic influence, or ague. It is indicated in splenitis when the color of the tongue becomes brown.

Chamomilla (in alternation with Mercurius) should be employed if symptoms of jaundice predominate, and in hepatitis also. See Materia Medica.

Digitalis is an important remedy against intermittent and frequent pulse; evacuations dry and ash-colored; urine thick and brown; pain in the side, &c., particularly in inflammation of the liver in dogs.

Podophyllin should take the place of Mercurius for the same symptoms, when that drug either fails to do good or has already been given in too large doses.

Bryonia will be needed when there is constipation and dry tongue; it may be given in alternation with Nux vomica.

China should be carefully studied in all cases of jaundice or hepatitis of an intermittent type. It may be alternated with Nux vomica. From six to ten drops once in four hours.

Graphites, China, Lycopodium, and **Natrum muriaticum** should be studied in the Materia Medica when the inflammation assumes a chronic character, or there is induration, or permanent hard swelling of the liver from any cause.

Belladonna, Lachesis, Pulsatilla, Sulphur, Nitric acid, and **Hepar sulphuris** may also be consulted in the Materia Medica in chronic cases.

For acute cases, the indicated medicines should be given in doses of ten, six, or four drops, suited to the size of the patient, and repeated once in two, three, or four hours, according to the severity of the symptoms. In chronic cases, it will be sufficient to give a dose of medicine twice daily, that is, the first thing in the morning and the last at night.

The diet in acute inflammation of the liver should be light and unstimulating, such as would be suitable in inflammation of the bowels or stomach.

The expression often used of "general" inflammation is not strictly correct. It is simply impossible that all the vessels can at one and the same time contain more than their usual quantity of blood. What is termed general inflammation is in reality fever attended by a quickened state of the circulation.

Inflammatory attacks are also usually divided into the three heads of acute, subacute, and chronic.

When the attack is sudden in its origin, violent in its action, rapid in producing its effects, and attended by fever, it is said to be acute. Acute attacks are seldom of long duration.

It is said to be subacute when the symptoms mentioned above are less marked. Such attacks are often obstinate and prolonged, and in many cases produce disastrous changes of structure.

Chronic attacks partake of the nature of subacute. The name has reference to the abiding nature of the attack rather than to any other features.

No sharp line of demarcation can, however, be drawn between these degrees of inflammation. They glide insensibly one into the other.

From the consideration of the theory and primary stage of inflammation, we now turn to the consideration of the disease, when it has established itself in a part.

The principal and usual signs in the part are hyperæmia, pain, redness, heat, swelling, and throbbing. The whole or any part of these symptoms may be present. The first or hyperæmia has been already dwelt upon. We therefore pass on to the next, namely, Pain.

The pain varies very much in different structures. Some are more sensitive than others, but as a general rule the pain is least where the parts are capable of yielding and swelling; and greatest where they are tense and firm, as in bones, tendons, and ligaments; or where the part, though soft in itself, is inclosed in unyielding structures, as is the case in regard to the interior parts of the foot. Hence many parts, which are ordinarily insensitive, become exceedingly painful under inflammation; and fever may be expected to supervene when such parts are attacked. The pulse, for instance, is often more affected in laminitis than in many other diseases.

Except in the visible mucous membranes, such as those of the nose, mouth, eyes, &c., we cannot see the redness on account of the hair with which the skin is covered. The redness is due to the greater quantity of blood contained in the vessels of the part affected, and sometimes also at a later stage to extravasation of the coloring matter of the blood into the neighboring textures. The redness in some cases remains long after the subsidence of the inflammation, on account of the length of time which the vessels after having been much overdistended take to regain their tone, and also because the extravasated material is but slowly absorbed.

The temperature of the part is increased both by the greater quantity of blood present in the congested vessels and also by an actual increase in the temperature of the blood at the part. There must therefore be generation of heat in the inflamed part. This cannot be wondered at when the great changes which are going on in inflamed structures are taken into consideration.

Swelling, which is always most appreciable in the soft external structures, is due in the early stage of the attack to the distension of the bloodvessels; and it is also much increased in the later stages by the effusion and exudation which take place through their coats.

These products, though of very different kinds, are all derived from the blood. They are, first, serum or the watery part of the blood; secondly, albuminous fluid; thirdly, coagulable lymph; fourthly, the blood itself. The swelling may be hard, or may pit on pressure, according to varying circumstances.

Swelling of the part necessarily accompanies every attack of inflammation, but the amount may be so small as to be scarcely appreciable. This apparent absence of swelling is particularly noticeable in bones and other firm substances.

Throbbing of the arteries is caused by a sort of regurgitation of the blood, which is partially arrested in its onward course by the congested state of the vessels at the seat of the disease. It is a marked sign of inflammation.

Throbbing is useful in many cases in enabling us to determine, with more certainty than we otherwise could, the real seat of the disease. For example, inflammation in the interior of the foot is plainly indicated by throbbing of the plantar arteries.

Inflammation, when tolerably severe or extensive, tells of its existence by other signs besides the local symptoms already detailed. It soon causes constitutional disturbance, which is recognized by shivering, cold extremities, dryness of the mouth and nostrils, constipation of the bowels, and diminished action of the skin and kidneys.

When the disease is complicated with or aggravated by fever, as in such cases it usually is, it will be marked by further symptoms, namely, an accelerated pulse, quickened breathing, and irregular temperature of the part at different times.

Though in its origin the disease is always local, yet in some cases, the constitutional disturbance may precede the visible manifestation of the local symptoms.

Shivering is a symptom of the greatest importance. It is generally present in the early stage of all serious attacks of inflammation. It often indicates some important change in the character of the blood, or is due to altered condition of the nervous system, or to the shock of an impending disease. No case, in which shivering is present, should be ever neglected for an instant. Although the animal may be shivering, the skin may be hot and burning.

The symptoms vary very much according to the part attacked. In all serious cases, such as inflammation of the brain, eyes, feet, lungs, or bowels, there are special characteristic symptoms, which mark each disease. These special symptoms will be noticed hereafter under the heads of those diseases.

One more feature, and it is a very important feature in inflammatory attacks, yet remains to be considered.

The attack may be of a "sthenic" or of an "asthenic" type (*sthenos*, strength; *asthenos*, want of strength, weakness). This will depend partly on the cause, but mainly on the constitution of the patient. The inflammation will probably be of a sthenic type, when it affects a vigorous animal; whilst it will probably be asthenic, if the patient is of weakly constitution. Sthenic inflammation cannot be produced in a very weakly animal by any degree of nervous exaltation; but the asthenic type may be generated in any animal by causes, such as bad food, malaria, &c., which lower the system.

The sthenic type is indicated by a quickened, full, and not easily compressible pulse. There is also in general thirst. If an important internal organ is attacked, the appetite is usually lost from the first, the urine is scanty and high-colored, and the fæces are hard and knobby. But when the inflammation attacks even important structures remote from the vital organs, the appetite is often for some time less affected. In both cases there are restlessness and discomfort. The skin is hot and dry. The respiration is quickened, and the breath is hotter than usual.

Sthenic inflammation may also exist with a full and very slow pulse. In such cases it indicates an affection of the brain. The appetite often remains for some time, and occasionally the patient continues to eat in a half-somnolent state.

In attacks on internal organs the duration of the sthenic stage is often very brief,—after which the disease runs into the asthenic type. The fact has a very important bearing on the treatment to be adopted in such cases. On the other hand, when inflammation of a sthenic type attacks organs, such as the laminæ, remote from the prime organs, the type may remain unaltered for a length of time.

In the asthenic disease all the vital powers are from the first greatly depressed. The case assumes, what is technically called a "low" type. The pulse is soft and compressible, weak and quick, and the volume of blood flowing through the arteries is comparatively small. The nervous power of the heart is prostrated, and it is unable properly to propel the blood through the system by strong well-defined rhythms. The patient is weak and downcast. The appetite is impaired, and the animal gradually cares less and less for his food, but it is not completely lost from the first as in the sthenic attack.

Fever may be said to be present in sthenic inflammation, when the pulse, in addition to being quick, full, and not easily compressible, is also bounding; and similarly in the asthenic attack, when in addition to being soft, compressible, quick and weak, the pulse becomes *very* quick. The heart appears to be endeavoring to make up for deficiency of power in each stroke by more frequent beats.

Most of the different varieties of inflammation, namely acute, sub-acute, local, diffused, and specific, may be present with either the sthenic or asthenic type. Chronic inflammation, however, is always, except perhaps quite at first, of an asthenic character.

The results of inflammation, which will now be detailed, may ensue equally from the asthenic as from the sthenic attack.

Inflammation according to its degree and other attendant circumstances may result in partial or complete resolution, in effusion of serum, in exudation of fibrinous material, in the formation of lymph and adhesion, in suppuration, in ulceration, or in mortification.

The most favorable termination of inflammation is resolution, or simple subsidence of the congestion. In this case the blood is again set in more active motion. The cause of this effect is cessation of the irritation producing functional disturbance, and the restoration of the nervous power at the original seat of the disease. The functions of the part being restored, the blood soon again flows in its regular course. The surrounding parts are then speedily relieved, and the abnormal heat, redness, swelling, &c., disappear.

The effusion is very slight, and is soon taken up by the bloodvessels and absorbents, and the parts regain in all respects their normal condition and integrity. This result is in many cases a spontaneous act of nature, but in other cases it may be brought about, hastened, or assisted by art.

The second and very common result even of mild attacks of inflammation is effusion of serum or watery part of the blood from the overloaded vessels into the textures of the part, producing a soft, pitting swelling.

Effusion generally gives relief to the pain and more acute symptoms by unloading the overdistended bloodvessels. In favorable cases the bloodvessels and absorbents soon take up the effusion, and the parts are restored to their normal condition.

This, however, is not always the case. The original disease may continue, and in such cases the undue amount of blood in the part must increase; and the watery effusion will then in consequence be poured out in increased quantities; or, under certain circumstances hereafter to be detailed, exudation of fibrinous material and the formation of lymph may take the place of the watery effusion.

If the distension of the bloodvessels is great, the albuminous parts of the blood may pass out through their coats, and from it fibrin will be formed in the cells of the tissue. The material so generated is known as lymph. Its more fluid parts are soon absorbed, and the lymph then becomes firm and solid.

Lymph, if due to sthenic inflammation, has a tendency very rapidly to become organized. None of the other fluids derived from the blood under such circumstances are capable of this change. Lymph is the material by which wounds are repaired, broken bones are joined, and new parts of the body are built up.

Hence in some cases lymph may be useful as a means of repair; but in other cases it may be formed in structures where, from its adhesive qualities, it may be a source of mischief, as, for instance, in the lungs, pleura, and many other parts; or it may be deposited in excess of the quantity required for repair, and in this way, when consolidated, may be an evil.

Lymph, however, if due to asthenic inflammation, is apt to degenerate.

The fourth result of inflammation is the formation of pus. Pus is formed by the transformation of the cells and nuclei of the areolar tissue into those of pus—the nutrient matter necessary for their formation being under the diseased action of the tissue exuded from the blood.

The process of the formation of pus is known as suppuration. It is seldom attended with much pain, except when the matter is unable to gain an exit. The time required for the formation of pus is very uncertain. Sometimes it appears a few hours after congestion has set in, sometimes not until after many days, sometimes not at all.

Healthy pus is not offensive, but when the stagnation has proceeded so far as to injure the vitality of the part, the secretion is apt to become thin, acrid, and offensive.

There is a marked difference between pus and lymph. Lymph consolidates, hardens, and builds up the part, on which it is deposited; whilst pus on the other hand diffuses itself through the natural textures, and softens, separates, and breaks them down; and either makes an exit for itself externally, or if confined burrows internally and forms abscesses.

Suppuration frequently supervenes on an undue and excessive formation of lymph. Lymph is apt to be deposited in quantities greater than required for the purposes of repair. From its tendency to accumulate and consolidate, it might, if permitted to remain, fill up and obstruct important organs and passages. Here nature, ever bountiful even in disease, interferes and prevents its undue accumulation by the production of pus, which breaks it up and causes its disintegration and removal.

Ulceration generally arises from long-continued or excessive obstruction to the circulation in the part, which in consequence becomes deficient in nutrition and weak. The tissues then become softened, liquefied, and degenerate, and are cast forth as dead, in minute particles.

Mortification results from similar causes, but in this case parts visible to the naked eye perish and slough away. It will be seen that the two processes differ in degree rather than in kind.

278. Simple, Irritative Fever.—Fever, however slight, must invariably be looked upon with suspicion, and we should not rest satisfied until the subsidence of febrile action and the return of perfect and vigorous health have determined the resolution. It will almost invariably appear as the earliest manifestation of organic inflammations, and may resolve itself into any of the inflammations of which we have already furnished the details. Or, if it be not the earliest manifestation of serious inflammatory disorders, its manifestation should lead us strictly to examine the general or local symptoms which accompany it. In default of any decided aspect of the excrements or urine, we should not fail to pay due attention to the condition of the feet and of the respiration.

Symptoms.—Fitful and suspended feeding and rumination; the pulse being accelerated and hard, or rapid, soft, and occasionally blended; sometimes chill, with shivering at the onset (returning periodically or not, and succeeded by flushes of heat or sweating); afterwards, in most cases, general increase of heat about the head and body; occasionally coldness of the ears, but always coldness of some or of all of the lower extremities; generally, however, increased heat of some, with diminished heat of others; the eyes of some animals are slightly suffused with red, and occasionally watery; the coat rough and staring, and the animal generally averse to motion, dispirited and listless, or very uneasy; the animal withdraws to the shade, if at grass, and often pants; slight heaving of the flanks, with somewhat difficult and puffing respiration, dryness of the muzzle, and heat of the roots of the horns; costiveness.

279. Inflammatory Fever.—*General Symptoms:* Oxen, cows, &c., in particular are subject to a disease denominated as inflammatory fever, which occasionally appears in an epidemic character, and which either results in rapid dissolution, or resolves itself into a multiplicity of complications, and the symptoms of which are as follows: Full, hard, and accelerated pulse; great languor; heated breath; dryness of the muzzle; stretching forward of the head and neck; dilated nostrils; extreme heat of the horns at the base; continued and subdued moaning; sometimes extreme restlessness, terminating in loss of consciousness; redness of the conjunctiva, and prominent appearance of the eyes; rapid, difficult, and very panting respiration, with violent heaving of the flanks; the mouth being generally unclosed, and the act of breathing being performed through the mouth instead of the nostrils; the appetite (as well as the rumination) being suddenly and totally suspended (premonitory symptoms being very rare, or at all events very obscure). Amongst sheep we may notice additionally (there being mostly two distinct stages) during the premonitory period, rapid transitions from coldness, with shivering, to extreme development of heat, the ears being persistently cold; slight swelling, with invariable and sometimes profuse discharge of clear watery fluid, from the eyes, the pulse being accelerated, and more or less hard or full. Whereas, in the subsequent period, the eyes are very red. The urine, at first scanty and of a dark-brown color (or more rarely pale and profuse), is characterized by a greater or less admixture of blood, the breath being hot, the pulse soon becoming feeble, accelerated, and generally irregular, and clotted or frothy blood being evinced on the surface of hard, knotty, small, and insufficient evacuations, or with bubbling, loose, but scanty discharge of excrement; a discharge of phlegm, purely, or of bloody phlegm, or later still, of commingled matter, phlegm, and blood, exuding from the nostrils.

280. Treatment.—For inflammatory fever, or general inflammation, Homœopathy has one priceless remedy, *Aconite*, which can alone accomplish, without injury to the system, all that was ever expected from the severe and dangerous and now almost disused method of bleeding. Aconite has also this great advantage, that its use not only removes as much as possible at the time, and as fast as possible, the undue excitement of the arterial system, but it also predisposes to and promotes those salutary crises of perspiration, mucous secretion, and urination, by means of which the overburdened (inflamed and congested) system is relieved. In doses proportioned to the size and age of the patient, and repeated in from thirty to sixty minutes, and from one to three hours, according to the intensity of the symptoms, Aconite presently affords a marked relief. And this relief is the more remarkable the more pressing is the need for such help. This is true not only of general inflammatory fever, but, in a still higher degree, of those acute local inflammations which arise suddenly, and which, if not arrested in their course with the utmost promptness, may as suddenly lead to disastrous consequences. Such, for example, is *croup*, which, though rare, has been known to occur in most of the lower animals.* Such also is pleurisy, which may produce fatal effusion if allowed to run its course unchecked. Such also is pneumonia, in which the primary congestion to the lung is rapidly followed by hepatization, which in its final stage goes far to destroy the substance of the lung itself, unless the violence of the original attack were moderated by some doses of this almost universal febrifuge.

Thus whether we have a general and diffused inflammatory condition, or some local development of the inflammatory reaction upon a particular organ, tissue, or apparatus, Aconite will always be found useful at first. And in many instances of domestic animals, whose systems are free from psora or other hereditary morbid influence, and were otherwise previously in a healthy condition, *Aconite* alone will restore the sick to perfect health. Fever, of whatever grade or kind, and whether general or local, is a reaction of the system against some previously introduced morbid and depressing influences. The first pathological action of these influences is indeed seen in the chilliness, more or less prolonged and intense, which precedes the accession of the reactionary fever. And even in this primary stage, the Aconite may be administered with a view to diminish the chilliness, and so in a measure forestall the violence of the subsequent reaction.

Finally, Aconite soothes the extreme restlessness of the nervous system, which forms so important a symptom of many febrile disorders, and which constitutes one of the most prominent indications for this remedy; and with the nervous restlessness, Aconite at the same time greatly diminishes the suffering which in greater or less degree necessarily attends the inflammatory condition.

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* Gamgee, "Dairy Stock," p. 201.

281. Typhoid Fever.—In veterinary works, as well as in those on human disorders, a certain confusion prevails as to the names of some forms of fever, especially those called typhoid and typhus. Until of late years the proper distinction had not been established between the two, and what is now termed typhus was frequently called typhoid. Thus Blaine describes, under the head of typhoid fever,* an epidemic of asthenic type which attacks cattle: "In some years commencing with gloss-anthrax or blain, or with pharyngitis, œsophagitis, gastritis, or enteritis, showing that the alimentary canal is the local object of attack. In others the aerating passages exhibit marks of *general* affection, in the shape of catarrh, or *individual* parts, by symptoms of laryngitis, bronchitis, pleuritis, or pneumonia. The viscera also are sometimes the primary object of attack; and sometimes it is the cellular tissues, which then throw out pustular eruptions, carbuncles, &c." This disorder lacks the peculiar characteristics of typhoid, and is what we now term typhus; nor is it far from being analogous to that which has already been described as Rinderpest; indeed, it is termed by Gamgee, in 1861, Contagious Typhoid Plague, or Cattle Plague.

With this preliminary explanation, and prefacing the additional remark that typhoid fever, strictly so called, is mostly confined to the horse, we proceed to give an account of the epidemic typhoid fever, which appeared in Great Britain in 1869, in the words of W. C. Lord, veterinary surgeon.†

Symptoms.—Shivering, not succeeded by sweating, but by cold skin and cold extremities. Hiccough is sometimes present. Marked debility and great dejection are apparent from the commencement. The pulse ranges from 70 to 100, is small, thready, and soon almost or altogether imperceptible. Respiration short and quick—about 30 per minute—accompanied by a working of the alæ nasi. The eye is anxious and expressive of pain, which is further demonstrated by the animal's occasionally looking at his flanks, pawing, and attempting to lie down, but he does not go further than on his knees, when he relinquishes the intention and stands as before, with his nose to the ground or his head under the manger. The tongue and buccal membrane have a congested appearance, and the saliva is usually increased. In nearly every case there is difficulty in swallowing from the commencement, which continues for three or four hours, when it suddenly disappears, in favorable cases. This symptom depends on stricture of the œsophagus, which can sometimes be seen and felt like a rope, when the horse tries to swallow. In about one hour after the primary symptoms of shivering or hiccough, the animal becomes tympanitic, and frequent eructations of air ensue. The bowels are either constipated, or a few soft balls are passed, covered with mucus. The urine is suppressed, or dark-colored and scanty. Pressure over the region of the stomach gives pain. The action of the heart soon becomes feeble, fluttering, or altogether imperceptible. Should the lungs become affected, the respiration will be deep and labored. Auscultation detects absence of respiratory murmur, bronchial respiration, crepitous râle, or other abnormal sound indicative of the change which has taken place in these organs. Towards the close of the disease (should it terminate fatally), the horse becomes restless, walks round the box, knocking his head against the box as though blind or insensible, at length falls, and after a few ineffectual efforts to rise, death closes the scene.

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* "Outlines of Veterinary Art," London, 1841, p. 293.

† "Monthly Homœopathic Review," May and June, 1869.

Diagnosis.—The diagnosis of the present typhoid epidemic among horses, continues Dr. Lord, may be found from the following pathognomonic symptoms: The sudden prostration of strength, and imperfect vital reaction after the shivering fit; the short, quick respiration and feeble pulse, varying from 60 to 90 per minute; the accumulation of viscid mucus in the mouth, or dry tongue, accompanied by difficulty in swallowing and chronic spasm of the œsophagus; the manifestation of abdominal pain, but not rolling or getting up and lying down as in colic; the great dejection, with anxious expression, and the supervention of tympany with cold extremities. These are important diagnostic symptoms, which, when accompanied with offensive breath and excretions (not, however, always present), can leave no doubt as to the nature of the disease.

282. Treatment.—Although the remedies must be varied according as the localization of this fever takes place in the throat, pulmonary, or gastric organs, yet it must be borne in mind that there is acute irritation or even inflammation in the ganglionic nerves and par vagum, therefore *Aconite* and *Nux vomica* should be given at the commencement of the fever with the view of cutting it short before it becomes concentrated in any vital organ. In prescribing Aconite for typhoid fever I know that I differ from most homœopathists. I must therefore explain on what principle I give this drug, and then prove by illustrative cases that it produces the desired effect. I look upon Aconite when given in large or moderate doses (such as I prescribe for typhoid fever) as a stimulant to the nervous system. But were I to hold the same views as other pathologists of the nature of typhoid fever, my giving a stimulant, such as I hold Aconite to be in certain doses, would be *contrary* and not *similar* to the disease. It is therefore necessary I should state that I consider typhoid fever generally, and in the present epidemic particularly, as dependent on congestion of some part of the nervous system, especially the ganglionic; and I believe that if others would subject the nerves to microscopic examination they would agree with me as to the nature, if not as to the treatment of this fever. What says Rokitansky in speaking of inflammation in the nervous tissue? "More important instances of hyperæmia are found in the sympathetic system; its central ganglia become congested in the course of general acute processes of low type, which become localized in those structures to which the ganglionic nerves are distributed."*

According to these views, my treatment is purely homœopathic; that is, to a state of nervous irritation and hyperæmia I apply a remedy such as Aconite, which is capable of producing similar symptoms when given in large doses in health. With respect to the action of Aconite in cases of typhoid fever, Professor Hempel remarks: "When the irritation seems to affect chiefly the peripheral nerves, the tongue is thickly furred, taste in the mouth unpleasant, foul; the patient feels thirsty, complains of aching pain in the head; heavy or sore pains in other parts of the bowels, constipation; experiences evening exacerbation of his symptoms; the urine looks dark, has a foul smell; the patient is very restless, feels depressed in spirits, is alternately wakeful and drowsy, &c. This species of acute irritation of the spinal, cranial or ganglionic nerves is very appropriately treated with Aconite."†

Nux vomica is given on the same principle as Aconite. Its action on the ganglionic system is characterized by the sudden prostration of strength; the abdominal pains and tympany; the quick, feeble pulse and fluttering of the heart; the febrile rigor and cold extremities; the constipation. Nux also causes spasm of the muscles of the pharynx and œsophagus, a symptom I found it speedily remove in the disease under consideration.

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* Rokitansky's Pathological Anatomy, vol. iii, p. 461.

† Hempel's Materia Medica, vol. i, p. 190.

Ammonium causticum I consider the best remedy when the fever assumes a putrid type, and the breath becomes very offensive. I have found it especially useful for malignant sore throat.

Belladonna and **Bryonia** are the appropriate remedies in those cases of low fever principally affecting the bronchial membrane, and accompanied by pleuritic stitches. Belladonna is necessary for symptoms of cerebral derangement whenever they accompany typhoid fever. It is also indicated in some cases where a soreness of the throat remains after the spasm of the œsophagus has been removed.

Phosphorus should be employed in alternation with Nux when the parenchymatous tissue of the lung is involved; or with Bryonia when the pleura also is inflamed.

Arsenicum is required in the latter stages of the complaint, when symptoms of great prostration ensue, especially when diarrhœa comes on. It is also of great value when abscesses of a malignant character form about the head or other parts of the body. It may be given in alternation with *Kali bich.* or *Iodine.*

Dr. Lord makes four local determinations of typhoid fever: when it chiefly affects the throat; when it chiefly affects the thoracic viscera; when it chiefly affects the abdominal organs; when it affects several vital organs, such as the brain, the throat, the pulmonary organs, and the gastric mucous membrane. We give his cases somewhat condensed illustrating these four localizations.

CASE A, CLASS FIRST.—*Typhoid fever, with Local Determination to Throat and Tongue, or Malignant Sore Throat.*

Troop-mare, aged twenty-three years. Jan. 25th, 1869. Admitted to hospital for swelling of the throat and great difficulty of swallowing, accompanied by fever of an asthenic type, marked by a small, feeble pulse, and other symptoms pathognomonic of this disease, such as have already been stated in this article.

Jan. 26th. Throat and glands so much swollen as to endanger suffocation; tongue hanging out of the mouth, infiltrated, congested, and incapable of being retracted. On each side, a little above the frænum, and extending towards the base of the tongue, could be seen a creamy exudation or deposit (not removable), which when lanced disclosed underneath a black mass of coagulated blood, the greater portion of which fell out after the operation. The breath was highly offensive, and the nasal membrane of a leaden hue. Pulse 72, nearly imperceptible; surface of the body and legs cold; bowels constipated; urine thick, scanty, and dark-colored. Not being able to give any medicine by the mouth, I used the hypodermic syringe, and by that means gave every four hours ten drops of the matrix solution of *Ammonium causticum* mixed with twenty drops of distilled water. I had also the mouth washed out frequently with Condy's fluid (solution of permanganate of potassa one dessertspoonful to half a pint of water.

Jan. 29th. Tongue retracted within the mouth and very little swollen, and the throat so much better that she was able to take some soft food, and the *Ammonium causticum* in the ordinary manner.

Jan. 29th. No swelling in the tongue, but still some in the parotid gland, accompanied by a discharge of ropy saliva from the mouth, having a most offensive smell. Next day these latter symptoms, as well as the soreness of the throat, increasing and being the effect of malignant ulceration, I applied caustic to the back part of the throat and tonsils.

Prescribed *Mercurius corrosivus*, second decimal, ten drops, and *Ailanthus glandulosa*, mother tincture, ten drops, in alternation, four doses of each daily.

Jan. 31st. Throat more swollen, and containing matter on the near side, which I liberated by a little incision: the matter that escaped was thin, dark-colored, and very offensive. The throat on this day was so sore and the tongue again so much swollen (Query: Was not this the result of the application of the caustic to the fauces?—ED.) that she could not swallow, and had to administer the medicine by the hypodermic syringe, giving every four hours *Iodine*, mother tincture, five drops; *Arsenicum*, second decimal, ten drops, in alternation. I had her mouth washed out occasionally with liquor calcis chlorinata (chloride of lime one-half a pound mixed in half a gallon of water) fifteen drops in two ounces of water.*

Feb. 2d. Able to feed. The tongue healthy and not swollen.

Feb. 3d. More difficulty in swallowing and tongue again swollen. Ropy saliva from the mouth, and breath more offensive. I found an abscess forming in the submaxillary space, from which, when opened, a quantity of dead cellular tissue, and thin, dark-colored, most unhealthy matter escaped. Ordered the wound to be dressed four times a day with *liquor carbonas detergens*, two drachms to the ounce of water. The following medicines to be given alternately every two hours, gradually increasing the interval between each dose as the symptoms improved: *Kali bichromicum*, 1st decimal, drops fifteen; Arsenicum, 2d decimal, fifteen drops. The chloride of lime wash to be discontinued; but the floor of the stable to be sprinkled over with the carbolate of lime, as the smell was unbearable.

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* These and other antiseptics, and stronger preparations of the homœopathic remedies which are not contained in the box of remedies accompanying this work, may always be procured on application to the publishers. Those specially required in such rare forms of disease as that now under consideration, can readily be obtained when needed, which might not be once in many years.

Feb. 4th. The first abscess which I opened in the throat, and which appeared to be going on favorably, was observed last night and this morning to be discharging a dark thin fluid, mixed with dead cellular tissue, having a very bad smell.

Prescribed the *liquor carbonas detergens* lotion. No change in the internal treatment.

Feb. 6th. Healthy discharge from both abscesses, which were healing up rapidly. No swelling of the tongue, bad smell, or any difficulty in swallowing. Prescribed the same medicines, three doses daily.

Feb. 8th. Convalescent.

Feb. 13th. Cured.

CASE B, CLASS SECOND.—*Typhoid Fever, with Local Determination to the Thoracic Viscera.*

Troop-mare, aged nineteen years. Feb. 20th. Symptoms: small, quick, feeble pulse, and superficial respiration, 20 per minute; slavering from the mouth and difficulty of swallowing, evidently from spasm of the œsophagus, as it was unaccompanied by any swelling of the glands; total loss of appetite and marked debility; respiratory murmur suppressed; bowels constipated. Prescribed *Nux vomica*, 1st decimal, every four hours.

Feb. 21st. Respiration 30; mucous râle audible in the bronchi; and in the left side a friction-sound, with pain on percussion; *breath offensive;* legs cold; cough painful, feeble or suppressed; and hanging in the air-passages. Prescribed *Belladonna*, 1st decimal, Bryonia, mother tincture, ten drops, in alternation, every two hours.

Feb. 22d. Cough much less painful, and not so frequent; breath less offensive; legs still cold, and nasal membrane of a slate color; great debility. Medicines continued as before.

Feb. 23d. Pulse and respiration natural, and neither friction-sound or mucous râle audible; breath not offensive, and no cough.

Feb. 24th. Convalescent.

Feb. 28th. Cured.

CASE C, CLASS THIRD.—*Typhoid Fever, with Determination to the Abdominal Organs.*

Troop-mare, aged five years. Jan. 18th. Symptoms: Shivering, hiccough, great despondency, hanging the head low, but occasionally regarding her flanks with an anxious expression. Now and then walks round the box and attempts to lie down, but soon relinquishes this intention, and stands with her head under the manger. Tongue and buccal membrane red; slavering from the mouth and great difficulty of swallowing, which lasted for four hours; pulse 78, very small and not easily felt; respiration 24, but superficial; pain on pressure applied to the gastric region, or when moved; fæces soft and covered with mucus; debility very marked. In one hour after admission to the hospital she became very much swollen (tympanitic). Prescribed ten drops of the mother tincture of *Aconite*. A dose every half hour removed the shivering in less than two hours; but the tympany increasing, I had the abdomen well hand-rubbed, warm enemas given, and prescribed *Nux vomica*, 1st decimal, ten drops, every fifteen minutes for four doses, and afterwards every half hour from 4.30 P.M. to 6.30 P.M.

Jan. 18th, 7 P.M. Tympany much reduced, but yet frequent eructation of air from the stomach; respiration short and quick; pulse 72, nearly imperceptible. Slavering from the mouth ceased, and there is now no difficulty in swallowing. Prescribed *Nux vomica*, 1st decimal, and *Aconite*, 1st decimal, ten drops to be given alternately every half hour up to 10 P.M., when neither pain nor tympany remained, but the pulse was 60 and feeble; respiration 24. Same medicines continued in alternation every two hours.

Jan. 19th. Appetite and spirits returned, and there is no fever. The respiration remains superficial and 18 per minute, but the pulse is natural, with the exception of weakness. No change in the treatment.

Jan. 20th. Cured.

Remarks.—In the foregoing case the effect of Aconite in arresting the fever and reducing an almost imperceptible pulse from 78 to 45 in less than twenty-four hours, bears out the assertion which I made in the first part of this article, that when *typhoid* or *asthenic fever is dependent on acute irritation or congestion of the nervous tissue, Aconite* and *Nux* are the most appropriate remedies. To prove this more clearly, with respect to Aconite, I subjoin a second case in this class.

CASE D.—Mare, aged fifteen. May 6th. Primary symptoms as in the last case, with the exception that in this the tongue was dry and its dorsum of a brown color. There was the same spasm of the œsophagus, which lasted forty-five minutes, and a similar tympany coming on one hour after the primary symptoms. Pulse 90, but so feeble that it could with difficulty be counted. Gave two doses of Nux, 1st decimal, with an interval of fifteen minutes between each, when finding no improvement I gave mother tincture of Aconite in a ten-drop dose. In fifteen minutes after the pulse fell to 60, and there was no difficulty in swallowing; but soon after this perceiving that she was rapidly becoming tympanitic, I administered mother tincture of *Cocculus*, ten drops, every twenty minutes for three doses, following it up by two doses of *Nux*, 1st decimal, which quite removed the abdominal pain and tympany. The pulse now rose to 78, accompanied by indications of headache. The fæces which were passed were soft and slimy, and the urine scanty and high-colored. She appeared to be very weak, so that the pulse could hardly be felt. Prescribed Aconite, 1st decimal, ten drops every hour for four doses; and then Aconite, 2d decimal, ten drops every second hour during the night.

May 7th, 8 A.M. Pulse 36 and intermittent. Discontinue medicine.

May 8th. No change in the pulse. The action of the heart I found fluttering and irregular (owing, no doubt, to the Aconite being administered too freely and in too large doses.—ED.), spirits bad, marked debility, fæces slimy, and urine turbid. Prescribed *Arsenicum*, 2d decimal, ten drops, four doses daily.

May 9th. Pulse not intermittent, much stronger, and 48 per minute; tongue moist and clean; appetite and spirits returning. No more medicine given.

May 11th. Cured.

Remarks.—In this case we not only observe the marked effects of Aconite on the ganglionic nervous system in reducing the pulse from 90 to 36 in twenty hours, but we also perceive an effect which I have before witnessed in this drug, namely, its causing the pulse to intermit when the fever is of a low type. In a troop-horse which I treated last February, the pulse was 72 and very weak, and the animal being unable to swallow I injected under the skin, with the hypodermic syringe, Aconite, 2d decimal, ten drops, when the pulse fell to 60 and became *intermittent in less than half an hour.*

CASE E, CLASS FOURTH.—*Typhoid Fever, with Local Determination to several Vital Organs, such as the Brain, Throat, Pulmonary Organs, and Gastric Mucous Membrane.*

Officer's charger, aged six years. Feb. 27th. Symptoms: Shivering, not succeeded by heat; spasmodic affection of the œsophagus; respirations short, 36 per mimute; pulse about 54, but hardly perceptible; legs cold; occasionally pawing and looking at his flanks, but not rolling or lying down; great drowsiness, resting his head upon the manger and dropping asleep; abdomen tympanitic. Prescribed mother tincture of *Aconite*, repeated in twenty minutes, which removed the shivering, when I gave *Belladonna*, 1st decimal, and Nux vomica, 1st decimal, in alternation, every half hour, for five hours. The pulse had then risen to 72, but the cerebral and abdominal symptoms had nearly disappeared. Prescribed the tincture of Aconite, 2d decimal, ten drops every second hour.

Feb. 28th. Pulse 48, scarcely perceptible; respiration 24, much deeper; pain on percussion and crepitant râle over the right lung; cough feeble and suppressed; legs cold. Prescribed tincture *Phosphorus*, 2d decimal, *Nux vomica*, 1st decimal, ten drops to be given alternately every two hours.

March 3d. Throat sore; inflammation increased in the right bronchial tubes; cough painful and readily produced by percussion; subcrepitant râles audible on auscultation in some parts of the right lung, and bronchial respiration in others; great prostration of strength, so that the pulse could not be felt. Applied ammoniacal liniment to the throat, and prescribed mother tincture of *Apis* and Phosphorus, 2d decimal, ten drops to be given alternately every two hours.

March 5th. Throat not sore; cough single, frequent, and suppressed; auscultation detects coarse mucous rattles of a plastic character in the right lung, and percussion gives pain; some discharge also from both nostrils. Prescribed ten grains of the first decimal trituration of *Antimonium tart.*, every third hour.

March 7th. No pain or cough on percussion; appetite returned; legs warm. Continue the same medicine every four hours.

March 17th. Cough and pulmonary symptoms removed. Discontinue medicine.

March 23d. Cough returned when at exercise only, but otherwise is in good health; pulse and respiration natural. Prescribed ten drops of the mother tincture of Bryonia, four times daily.

April 2d. Cured.

283. Typhus Fever.—This is a fever less purely nervous than that just described as typhoid; but it ranges in a lower grade. In typhoid fever there is congestion, or inflammation, followed by quick decline of vital forces and rapid suspension of vital reaction. In typhus there appears to be little if any reaction, even from the very first; typhoid seems a nerve affection, typhus a blood disease; the former is characterized by constipation and tympanitis, the latter by collapse and putrid diarrhœa. The one may sometimes be successfully treated by remedies, like Aconite, which act as pure stimulants, the other requires something capable of renovating the blood itself. Typhoid may lead on to typhus, and exhibit in its downward course many typhus symptoms; but typhus never leads up to typhoid. That form of disease which Gunther, in his *Homœopathic Veterinary Manual*, describes under the title of "Typhus," as well as what is here set down under the following "Symptoms," is scarcely to be distinguished from the Contagious Rinderpest of Europe, or Cattle Plague of Texas. But since this form of disease may occur sporadically, we give it place here.

Symptoms.—Sometimes inflammatory symptoms, at first, quickly subsiding into low, intractable depression, with evident dulness and want of reactionary energy; or, in other cases, the appearance of the latter manifestations, without previous and apparent development of high inflammatory symptoms; the pulse is somewhat accelerated (at the onset), generally declining in rapidity, as well as in strength, and always feeble; sometimes it is fluttering, indistinct, and uncertain, with intervals of greater acceleration, provoked by any momentary excitement, still, however, preserving the characteristic weakness. At first we may notice total suppression of evacuations, or hard, knotty, insufficient evacuations, more or less mixed with phlegm, and very offensive; but continued relaxation soon succeeds, when the excrement is gradually more and more characterized by the presence of blood, and by offensiveness increasing to putridity; the coat is rough and unthrifty, the hair or wool being gradually shed; there is an unaccountable and progressive wasting of strength and condition, the appetite continuing for some time to vary without subsiding, and rumination even being effected, though fitfully, and generally without vigor; the ears and horns being characterized by a slight increase of heat, especially towards night (the ears of sheep hang listlessly on either side); the eyes being dull, inanimate, and turgid (and sometimes sunken, and wearing an anxious painstricken expression), or half closed, slowly moved, and almost vacant; the urine is dark-colored and latterly becomes mingled with blood and very offensive, like all other discharges; the mouth is dry or clammy, the breath becomes very offensive; and lastly, sluggish, malignant ulceration is developed about the muzzle, the lips, and the interior of the mouth; or tumors appear which soon proceed to ulceration along the back, about the joints, and over the udder; the gait becomes staggering and uncertain, and the animal stands with its back arched, and its feet huddled closely together, apparently afraid to move, the hind quarters often giving way.

Treatment.—Stimulants and tonics alike fail in the treatment of this low form of disease. But homœopathic remedies have ever proved very successful, snatching many patients even from the very jaws of death. The following are the principal medicines, with their leading indications in this complaint.

Rhus tox.—Great weakness and prostration; tongue dry, cracked, brownish; loose, sanguineous stools; clammy perspiration; urine deep-colored; curvature of the back; swelling of the legs. Pulse intermittent; difficulty of breathing. Erysipelatous inflammation.

Arsenicum.—This remedy, already fully described under "Rinderpest" and other malignant affections, is set down as being the only one needed in typhus by Gunther. It is indicated in this, as in many other disorders, by loss of appetite; debility; brown or black and cracked tongue; diarrhœa, dark, offensive, bloody, involuntary; scanty or involuntary, bloody urine; restlessness and distress, worse after midnight; feeble pulse; cold clammy perspiration. Coldness of the legs, dropsical swelling of the legs, and of other parts of the body, from extreme prostration.

Rhus tox., **Acidum muriaticum**, and **Acidum phosphoricum**, the latter remarkably characterized by listless *indifference* and apathy, should be studied in the Materia Medica, in order to discover if they are required in any given case.

Dose.—Of the selected remedy, mix twenty drops thoroughly in a quart of water; give to horses and full-grown cattle a wineglassful once in two hours; to smaller animals, doses smaller in proportion.

284. Milk Fever—Puerperal Fever—Dropping after Calving.—This very dangerous, and in the ordinary practice, almost incurable disease, is much more common in cows and sheep than in mares. It is said not to be so apt to occur at the first time of calving, as on the subsequent occasions. High and stall-fed cows are most subject to this disorder, especially those supplied with rich food for the sake of making them give as much milk as possible. Milk fever sets in very soon after parturition, from the first to the fourth day; after the fourth day, if doing well, the cow may be considered safe. Sometimes its cause may be traced to violence; at others to exposure to wet and cold; or the cause may be entirely indiscoverable. Mr. Blaine* says, "the treatment in the early stage calls for bleeding, and that liberally;" but in the early stage alone; and he advises a plenty of most powerful medicines. Gamgee,† on the other hand, tells us, "above all things, avoid strong internal remedies and bleeding." Either method seems equally unsuccessful; for nearly all die that are taken, according to the testimony of allopathic veterinarian surgeons.

From Dr. Moore's original monograph,‡ we take the following account of milk fever, and its homœopathic treatment.

Symptoms.—Milk fever begins shortly after calving, and, in the majority of cases, within twenty-four hours; the cow refuses her food, or eats only a very little of it; she is depressed, hangs her head, and looks dull; the horns are hot, the nose instead of being damp with the healthy dew, is hot and dry; the urine is scanty; the bowels are confined, or, if moved, the dung is hard and lumpy; the pulse is quicker and fuller than in health; the breathing is quickened, and attended with heaving at the flanks. To these warning indications there succeed, with more or less rapidity, those unmistakable symptoms which are perhaps the first to attract the owner's attention. The milk is reduced in quantity, or entirely stopped; the eyes glisten, and look bright and staring; the white of the eye is covered with numerous red streaks, or it is of a leaden color; the eyeballs are thrust forward from their sockets, giving the cow a somewhat wild and anxious expression; the hind legs seem weak, and are separated a little from each other; she appears to stand uneasily upon them, first rests upon one for a short time and then changes to the other; this paddling and shifting about from one leg to its fellow continues until the difficulty of standing increases, and the animal supports herself against the wall or stall; she does not chew the cud; all discharge from the bearing is stopped; the calf is neglected; the pulse is now slower than before, and the breathing more difficult; the udder is hard and swelled, and little or no milk can be withdrawn from it. Gradually becoming worse, the weakness in the hind legs increases to so great an extent that they can no longer support her; she staggers and sways about, falling, at length, heavily upon the ground; she tries to rise again, and may, or may not, succeed; in either case, she soon loses all power of getting up, and remains upon the ground in a helpless state. In this stage of the complaint, the symptoms vary in different cases. In some cases they are: the cow tosses her head about from one place to another, writhes her body, lashes her tail, struggles, stretches out her hind legs, moans, bellows, and appears, from the expression of her face and general behavior, to suffer great pain. At the same time, the breathing is difficult and labored; the skin covered with clammy sweat; and the paunch enormously swollen, owing to the stomach having entirely, or partially, lost the power of dissolving the food, which now undergoes the ordinary chemical changes, attended with the giving off of gas.

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* Delabere Blaine's "Veterinary Art," p. 296.

† "Dairy Stock," by John Gamgee, Edinburgh, 1861, p. 72.

‡ "The Milk Fever of Cows," by James Moore, M.R.C.V.S., London, 1861, second edition. "Manual of Veterinary Science," by William Dick, Edinburgh, 1862, p. 121.

Unless the swelling which arises from the presence of this gas subside, the breathing becomes more and more difficult and labored, so that the animal can scarcely take her breath;* the pulse becomes oppressed, and can scarcely be counted at the jaw; the legs become very cold; more severe pain is felt; wind, having a bad smell, rises up from the stomach, and death ensues.

In other cases again these symptoms are altogether absent, or exist only in a slight degree; the more prominent ones being these: the cow lies stretched out full length upon her side, or her head is brought to the opposite side, with the nose towards the udder, and the chin resting upon the ground; or the head is twisted directly backwards, with the nose held out, and the horns turned upon the shoulder in a most awkward manner. The eyes look dim and glassy; upon placing a light near them, the cow takes no notice of it, and does not move or shut the eyelids, for the power of seeing is lost; the pupil is widened, in some cases almost round, and does not become narrower when light is held before the eye, as it does in the healthy state; the ears hang down; the mouth is partly open; and when the head is raised, the lower jaw drops down; the cow has not the power of keeping the head up when you raise it from the ground; the ability to swallow is nearly or quite gone; she has lost the sense of feeling; the breathing is still difficult and attended with rattling in the throat; the pulse is weak, slow, sometimes stops beating for a moment or two and then goes on again, and, in some cases, can scarcely be felt at all; the horns, legs, and surface of the body generally are cold and chilly; the swelling of the belly increases; the udder is much swelled, hard, and sometimes red on the outside; in some cases, neither dung nor urine is discharged. All these symptoms become worse and worse, and if it resists all treatment, death ensues, generally within two days after the attack, and in some cases within a few hours.

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* For directions for feeling the pulse of animals, see the first chapter of this work.

Treatment.—The symptoms of this disease appear so suddenly, and run so quick a course, that the cow, about the calving time, should be narrowly watched, *both night and day*, in order that no time may be lost in opposing the complaint at its onset by the proper remedies. The delay of even a few hours may settle the question of the cow's recovery; the disease is then fully developed and death may ensue before the medicines have had a chance of acting. But even in the advanced stages the disease may be subdued. The author has had cases of recovery where the butcher was in attendance for several hours to slaughter the animal when at the point of death. Still, the cow is much more likely to rally if the disease be combated as soon as it begins. It behooves every farmer, therefore, to be prepared, and at once to give the medicines when the complaint declares itself. Several medicines are suitable for this disease, but the following six are, according to the author's experience, the most efficient, and should be kept at hand in case of emergency; they are Aconitum, Arsenicum, Belladonna, Bryonia, Ammonium causticum, and Nux vomica.

Attention to the following directions will enable every cow-owner to decide which of these medicines is most suitable in any given case of this disease. He must first find out the symptoms or sufferings of his cow, that is to say, he is to inquire as to the pulse, breathing, milk, chewing of the cud, and general condition of the animal.

285. Treatment.—*In the first place*, then, supposing the following symptoms to be present: refusal of food; dulness and depression; hot horns; dry, hot nose; scanty urine; confined bowels; quick, full pulse; hurried, heaving breathing; wild, staring eyes; stoppage of milk; wild and anxious expression of countenance; paddling and shifting of the hind legs; eyeballs thrust out; tossing about of the head; struggling and uneasiness of the whole body: for these indications of the disease the best and most successful remedies are *Aconitum* and *Belladonna*. The author believes that if they were given as soon as the disease becomes manifest, almost every cow would recover.

Directions.—Give them in twenty-drop doses, not both together, but in turns, thus—twenty drops of *Aconitum* in a wineglassful of water to begin with; then in one, two, or three hours after, give twenty drops of *Belladonna* in a wineglassful of water; then, after from one to three hours, give *Aconitum* again as before; then, after the same length of time, another dose of *Belladonna*, and so on as long as necessary.

In the second place, if the disease advances and the symptoms are these: enormous swelling of the paunch; frequent, difficult, and labored breathing; gurgling and rattling in the throat; slow, weak, oppressed pulse; cold, clammy skin; extreme coldness of the legs; lashing of the tail, tossing about of the head, and writhing of the body, showing that severe pain is felt; then give *Ammonium causticum.*

Directions.—Give twenty drops of *Ammonium causticum*, in a wineglassful of water, every fifteen or twenty minutes, until the swelling goes down.

In the third place, if the symptoms just given remain, and the last medicine has had the effect of lessening the swelling; if, further, the cow is in the sleepy stage, and presenting the following condition: insensibility to pain; loss of power of seeing, of swallowing, &c.; glassy state of eyes; open mouth; inability to hold up the head when it is raised; general coldness of the body, &c.; then *Arsenicum* is to be given.

Directions.—Give twenty drops every fifteen, twenty, thirty, or sixty minutes, according to the violence of the symptoms, until improvement sets in, then lengthen the time between the doses to two, three, or four hours.

In the fourth place, if the cow has recovered from all the more urgent symptoms; if all traces of fever and of the sleepy stage have yielded to the foregoing remedies, but the animal still lies on the ground, and is unable to rise up, except upon her fore legs, then give *Nux vomica,* ten drops in a little water, every four hours, until the cow is well.

In the fifth place, if in the first stage the eyes are not bright, staring, or thrust from their sockets; if the udder is soft and flabby; in short, if the list of symptoms show that the head is not much affected as yet, *Bryonia* is to be given, ten drops in a little water, every one, two, or three hours, according to the urgency of the symptoms.

Belladonna will be indicated by symptoms affecting the head: eyes blinded, or dilated pupils, or bright, projecting, and glistening; by relaxation of the sphincter muscles of the rectum the fundament and bearing are open and flabby; and by the udder red, hot, distended, and destitute of milk.

In the sleepy stage, when the power of swallowing is gone, and when the cow would choke were large quantities of fluid introduced into the mouth, the medicine, in ten-drop doses, ought to be given in half a tablespoonful of water instead of a wineglassful. The advantage of our remedies is here apparent. During this stage, when giving the medicine, care must also be taken not to hold the head too high, otherwise the animal may be choked.

GENERAL DIRECTIONS.

1. The cow should, if possible, be placed in a large box or stall by herself, where there is plenty of fresh air, so that she may breathe freely and have room to make attempts to rise, which she will frequently do when recovering.

2. She should be laid upon clean, dry straw, and no dung should remain long.

3. She should be comfortably clothed according to the state of the weather.

4. The milk should be frequently drawn off, and the udder hand-rubbed.

5. If she makes no water, the catheter should be passed to draw it off, at least night and morning.

6. Care must be taken that the fore part of the cow is *rather higher* than the hinder, or that she lies upon an exact level, with her legs under her, as in the natural position. She must be placed rather upon one side, and well supported with bundles of straw. If she do not turn herself, she must be shifted from one side to the other every two hours. She must on no account be allowed to lie stretched out full length on one side, else she will surely become worse and die from suffocation. Her head should be supported with bundles of straw.

286. Cases.—We subjoin a couple of Dr. Moore's cases to show his method of treating this disease, and its great success.

Subject.—A cross-bred, six years' old cow, belonging to the Rev. Mr. Figgins, Booth Cottage, Blackley, near Manchester.

History.—Has been in the possession of its present owner for a considerable time, and has always been well. About twenty-four hours after calving, she dropped, and was quite unable to rise up. Mr. Figgins, who has always a supply of medicines by him, lost no time in giving several doses of Aconitum and of Belladonna before my arrival. This promptitude of treatment kept the disease in check, for, on examining the cow, I found that all the worst symptoms had yielded.

Present State.—The most prominent symptoms are: pulse 76 and strong; respiration hurried; she is lying easily upon the ground, but is quite unable to rise; her eyes are glistening, wild-looking, and projecting; there is no milk, appetite, chewing of the cud, &c.

Treatment.—To have Nux vomica every three hours.

Much better; has chewed the cud; would eat more than is given, making bold efforts to rise.

Continue medicine.

She got up last night; gives milk freely; all the functions are again healthy.

Subject.—A seven year old, *very highly* fed cow, belonging to Mr. Joshua Marler, Newton Moor, near Manchester.

History.—About twenty-four hours after an easy delivery, her fifth, she began to show all the warning symptoms of this disease, and I was sent for immediately.

May 20th, 1856. *Present State.*—The pulse is slow, feeble, and quickened; the udder is hard, distended, hot, and yields no milk; no dung or water comes away; the fundament and bearing are open and flabby; the body is occasionally rolled and writhed about uneasily and the tail lashed; she sometimes tosses herself from side to side, but is, of course, quite unable to rise; the belly is swollen; she cannot hold her head up; the eyelids are half closed; the pupils dilated; tears roll down the face—in short, without enumerating others, she has all the symptoms of the sleepy stage.

Treatment.—To have Belladonna and Arsenicum every hour, turn about, until symptoms of improvement show themselves, then every two hours.

May 21st. All the above symptoms are much relieved; the swelling is gone down; she can hold up her head; has dunged and made water; drank some gruel, &c.

Continue medicine.

May 22d. She lies like a cow resting, to all appearance well, only unable to rise.

To have Nux vomica every three hours.

May 23d. Got up this morning, all right.

CHAPTER VIII.

ERUPTIVE FEVERS AND CUTANEOUS DISORDERS.

287. **Scarlatina.**—Horses sometimes present symptoms analogous to those of human scarlet fever. They become feverish, the pulse being 60 or higher, and the breathing 20, or upwards. The throat is sore, also some difficulty and pain in swallowing; the throat symptoms vary in severity in different cases. The glands about the throat are more or less painful, hot, and swollen, and there is a troublesome throat cough. If the nose be examined, we shall discover on the nasal membrane, a number of scarlet spots of different sizes, which gradually run together and form red patches; a similar eruption is also found on the mucous membrane of the lips, and on the skin wherever white hair enables one to see it. There is sloughing in the nose at the site of the spots, as is the case with the purple petechiæ of purpura hæmorrhagica. When the disease is on the decline, there is a copious shedding of scurfy scales. Blotches and elevations of the skin have been described by some writers, but they do not occur in genuine cases of scarlatina. After the disease has continued some days, and the horse appears to be doing well, a swelling, which pits on pressure, suddenly appears under the belly, gradually extending forwards to the breast, and backwards to the prepuce, and also filling one or more legs.

288. **Treatment.**—*Aconite*, six drops every two hours when the fever runs high; may be alternated with Belladonna.

Belladonna.—Troublesome cough; throat sore, painful and swollen.

Mercurius may be needed in some cases, see Materia Medica for special indications; it may be alternated with *Belladonna;* six drops for a dose of each—a dose of medicine to be given once in three hours.

Arsenicum.—Dropsical condition after scarlatina; swellings in the legs and under the belly (in the sheath);—give for a dose ten drops, three times a day. If the dropsy does not readily yield, *Apis* may be given in a similar dose, in alternation with Arsenicum; a dose of medicine once in four hours.

289. **Measles.**—This is a disease of a peculiar character, and which appears to be identified only amongst pigs. It is attended with very

considerable constitutional disturbance, but is not usually of a very serious tendency, the treatment being simple and direct.

Symptoms.—The appetite fails, the pulse becomes quick, full, and often hard; the general surface of the skin is hot and dry; the muzzle partakes of these symptoms; the eyelids are puffed, swollen, and often very red and inflamed on the inner surface; a watery and sometimes a viscous discharge is emitted from the nostrils; a short, dry cough prevails; red blotches, slightly elevated, appear upon the skin in various parts, but especially between the fore and hind legs, and on the inner side of the hams; and, as the disease progresses, there are sometimes black, angry pimples beneath the tongue, staggering and sinking of the hind quarters, and detachment of the skin in large pieces. This disorder sometimes attacks *sheep*, although in a varied form.

290. **Treatment.**—*Aconite* may be needed at the first; indicated by quick pulse, hot, dry skin, thirst, restlessness.

Dose.—Six drops once in three hours.

Pulsatilla.—The great specific in measles in swine, as well as in the human patient. May follow Aconite; a dose, six drops once in three hours; or it might be alternated (once in four hours) with Aconite.

Arsenicum.—Required in the severer cases, where there is tendency to putridity, offensive diarrhœa; the skin sloughs in patches, and there is great prostration.

Dose.—Four drops in a little water, once in four hours.

Ipecacuanha.—This remedy may be needed for the incessant, dry cough which sometimes appears in connection with this disorder, especially in sheep.

Dose.—Six drops mixed in water; a portion once in two hours, till relieved.

Bryonia, Rhus, Sepia, and **Sulphur**, should be consulted in anomalous cases. *Sulphur* especially may be given, when convalescence does not appear, but seems retarded by some unknown influence.

Dose.—Four drops thrice daily.

291. **Small-pox.**—Young dogs are occasionally subject to an eruptive disease, which is very analogous in its external appearances to the small-pox of the human body, not only in respect of the pustules, in shape, &c., but also in the regular progress of development, and in the conditions of aggravation or modifications to which it is subject. The influence of age, climate, and temperature,—and atmosphere generally,—in promoting a greater or less degree of malignity, are also analogous.

Proper ventilation, and coolness without chill, are essential in favoring a wholesome development. Great heat materially aggravates the disease, and the eruption, exposed to its action, will become more severe, confluent, and intractable. Sudden chill, or exposure to a great degree of cold, will cause repercussion, and will lead to the fatal consequences which attend a similar occurrence in the majority of severe eruptive disorders. The progress and maturity are light and rapid when the disease occurs in young puppies, about three months old, and it rarely occurs amongst full-grown dogs, or, if it does occur, it is more intense, severe, and critical.

Horses are affected in the lips, but especially in the heels, the attack in the latter region being undistinguishable in external features from common grease. If, however, the matter in the vesicle be inoculated on a cow's udder it will give rise to cow-pox, and if on a child's arm the well-known eruption, like that of vaccination.

In cows, the eruption appears on the udder, first as red, circumscribed, hard pimples, which gradually increase in size, until they become vesicles, filled with a clear fluid and surrounded by a red ring. Later, the vesicles contain matter; they break, and the matter dries into scabs, which fall off. Some amount of fever is present. It is from these vesicles that vaccine lymph for vaccination is obtained.

In sheep, the disease is highly contagious, infectious, and destructive to a flock. After a few days of incubation, during which the animal is dull and off its feed, small red pimples appear, which grow larger and flat, and at first contain a clear fluid, subsequently matter. Then the pustule breaks, and the escaped fluid dries into a scab, gray or brown in color, which presently drops off. The attendant fever runs high. Discharge from the nose and eyes, hurried breathing, lividity of the membranes of the mouth and nose, and offensive smell of the skin are frequently observed in ordinary cases. In malignant cases the vesicles contain bloody serum, and gas is developed under the skin; or death takes place suddenly before any rash appears; or the air- or food-tube is seriously implicated from the eruption appearing in one or other of them. The average duration is about three weeks. Sloughing of the skin in patches, or of the feet or hoofs, is a not unfrequent consequence.

Causes.—This disease appears to be of epidemic origin, and to be highly contagious, and any circumstances which tend to produce constitutional derangement, will be liable to issue in small-pox during its prevalence.

Symptoms.—Irritative fever is the first manifestation, which gradually becomes more severe as the disease begins to be developed; clustering, or single and irregular red spots, with more or less elevation, begin to appear upon the reddened surface of the skin, especially on the inner sides of the fore legs, between the thighs, and over the belly; day by day these spots are progressively developed, becoming more and more elevated and prominent, and forming pustules, or minute tumors, which become pale and discolored at the apex about the fifth day, the summit gradually exhibiting the secretion of a serous lymph, which then thickens, and becomes first white, then yellowish,—when the apex becomes depressed, or, in some cases, only flat. At a period varying from seven to ten days, the process of desiccation commences. Where the pimples have been severely rubbed, the development of sores will frequently retard the desiccation and scaling off of the pellicles. The process of desiccation may occupy various periods. In the meanwhile, fresh pustules are in course of development, but, as soon as desiccation sets in respecting those of earliest appearance, those which are not matured gradually disappear, leaving only (as all of them do) brown spots, which disappear in the course of time. A few bare scars remain after the disease, on which the hair does not grow, and which are occasioned chiefly by the sores which have ensued from friction. When, amongst other after-effects, we perceive excessive offensiveness of the breath, sweat, and excrements, we may generally anticipate the sudden appearance of symptoms of inflammation of the lungs,—such as, hissing and rattling respiration, ejection of thick matter from the air-tubes, the presence of copious, thick, yellowish matter in the nostrils, noisy and snoring respiration during rest; violent cough, terminating in the expulsion of thick, yellow, adhesive phlegm, from the mouth and nostrils, &c.

292. Treatment.—In the horse, as well as in the cow, variola is usually so mild as to require no special treatment. When sheep are attacked, the diseased should be separated from the healthy, and the latter inoculated, and they will have the disease in a milder, more manageable, and less fatal form than if they had become infected by contagion or infection in the usual way.

Aconite, six drops, once in three hours, or two to the smallest animals, may be given at the outset, when there is much fever.

Antimonium tartaricum (Tartarus emeticus) is homœopathic to the whole disease, and is indicated throughout its whole course, both for the eruption and for the pulmonary symptoms so frequently present.

Dose.—Four drops every three hours.

Arsenicum will be required when its usual conditions appear, such as prostration, purging, and tendency to sloughing, and the whole system seems likely to sink into a low, typhous state.

Dose.—Four or six drops, every three hours.

Gunther advises *Rhus tox.* and *Arsenicum*, in alternation, for old dogs; to be followed by *Dulcamara* and *Causticum*.

293. Cow-pox.—The consideration of diseases and affections incidental to the skin, and external surface, cannot be concluded without some special allusion to an affection which has become of such immense importance to humanity, and which has so strikingly developed the immutable law of ANALOGOUS REMEDIES, or HOMŒOPATHY.

Cow-pox is of two kinds: the milder form is Spurious Cow-pox, and the more malignant form is True Cow-pox.

Causes.—Contagion is certainly one very important and perceptible cause of this disease, but the remote causes have hitherto remained very obscure. It is to be believed, however, that atmospheric influences, combined with mischievous food, would generate it in its original and specific character.

Symptoms of Spurious Cow-pox.—The appearance of a pustular eruption on the teats, the elevated spots being without any uniformity of size or shape, and attended or unattended with slight constitutional disturbance; after having become developed, the crown becoming distended with thick, opaque, yellowish matter, the exudation produces a crust, which, if undisturbed, will fall off, of its own accord, leaving the skin uninjured, but which, if artificially removed, either in milking or otherwise, will leave behind it a multiplicity of diminutive, ulcerative sores, more or less sluggish, and slow to heal.

Symptoms of Specific Cow-pox.—It is preceded and attended with considerable manifestation of fever. The constitutional disturbance often runs high; the milk fails; the appetite is impaired, and rumination is suspended. The eruption, like that just described, presents itself on the teats, sometimes extending to adjacent parts; it is, however, of more gradual development, and the pustules are more extended, more uniform (being round in shape), surrounded with a bright-red, inflammatory circumference, and becoming concave at the apex, with elevated margins; the pustules, in this instance, first exhibit the presence of a thin, serous fluid, which gradually thickens, and becomes yellower; oozing and scabs ensue, subject to the same conditions as the former, but which, if disturbed, leave behind them a severe, deepseated, and often malignant ulceration.

294. Treatment.—Where any treatment is requisite, it must be similar to that advised for small-pox or variola itself—which see; also *Antimonium crudum* and *Thuja occidentalis.*

295. Carbuncular Diseases.—Dr. James Moore gives the following account of a class of diseases which have a close but as yet imperfectly understood relation to the various forms of malignant and infectious diseases called Cattle Plague, Rinderpest, &c.

The diseases of this class depend upon the development of a poisonous animal principle within the body of several of our domestic animals, and are characterized by the existence of a fever of a low or malignant type, and, in some forms, by a local lesion of the nature of carbuncle.

They all arise from rankness or poverty of pasturage, exposure to damp or cold, and from unascertained local causes. They attack herb-eating animals, and are communicated to others by contagion or inoculation, and have often prevailed as epizootics on the continent of Europe. They are most severe in full-blooded animals, and frequently follow a change from poor to rich diet.

True carbuncular diseases of animals are communicable to man by contact with diseased hide, horns, bones, blood, and flesh, and by flies and other insects carrying the poisonous matter from an infected animal's carcass to man. The disease is known, in human medicine, as "Malignant Pustule" (for which Belladonna is a principal remedy). The following are the most common forms:

(I.) **Gloss-anthrax,** already described.

296. (II.) **Splenic Apoplexy,** which some authorities regard as a veritable carbuncular fever without external local lesion, and which others look upon as a non-specific congestion of the spleen. Splenic apoplexy, in oxen, cows, and sheep, presents the following symptoms: The disease comes on suddenly, and without warning, and often destroys life in a few hours, from three to eighteen in the majority of cases. At first the animal appears to be excited and the eyeballs protrude; presently it is uneasy and restless, and manifests the usual symptoms attending pain in the belly. The urine and fæces are often tinged or mixed with blood. The back is arched, and the animal remains fixed in one position. The breathing is short and quick; the pulse quick, and, in the last stage, weak and imperceptible. Before death the animal falls down; a reddish, frothy discharge flows from the nostrils; the muscles twitch; the legs and ears are deadly cold; the teeth are ground; and the animal moans or bellows.

297. (III.) **Braxy in Sheep.**—This is a very common and fatal disease amongst sheep, especially in mountainous districts, and in others when the food is changed to turnips, &c., in the winter. Amongst the shepherds the term "braxy" is as nondescript as that of "the epidemic," "the distemper." Some mean by it an attack of diarrhœa, or of inflammation of the bowels without any specific points in the case. Properly speaking, it should be understood as designating a blood-disease, which suddenly attacks one or more sheep, particularly in frosty weather, and proves fatal in a few hours. The most usual symptoms are, in the early stage, staggering gait, tumbling forwards or backwards, hard, dry dung, and scanty, dark urine, with difficulty in passing both. The eyes are found to be red, the mouth hot and dry, the pulse quick and bounding, the breathing labored and panting, and the skin hot. Then the animal becomes weak, and drops down or rolls on its back, and soon dies. In some cases, before death, gas is generated under the skin, and a crackling noise is heard when the hand is passed over the back; in others, the paunch is distended with food and gas, giving rise to a swelling on the left side. After death, rapid decomposition sets in.

298. **Treatment.**—Very little can be done except in the very earliest part of the attack. It has been recommended to cause the animal to move about briskly. It should be put into a warm place, and have hot gruel drenched down in small quantities. Warm water injections are useful when there appears to be irritation or pain in the belly, and the fæces are hard. When the paunch is much distended with gas, perforating it with the trocar may be necessary. In such cases give *Nux vomica* and *Ammonium causticum* in ten-drop doses, every hour, until there is improvement, and then every two or three hours. When symptoms of prostration appear give *Arsenicum* or *Rhus* in the same way. Should recovery take place, great care as to diet must be taken for some days. For the prevention of the disease, sheep should have the means of shelter on the hills, and should not be suddenly put on a rich pasturage.

299. **Black Quarter.**—This form is likewise called *inflammatory fever, quarter-evil, joint-murrain, black-leg.* It affects both oxen and sheep, and is widely spread in this and other countries. The young are more subject to it than the old.

When the disease is fully developed, there are symptoms of high febrile excitement, such as quick, full pulse, hurried breathing, outstretched head, bloodshot eyes, hot mouth, loss of appetite, moaning, anxious countenance, &c. The animal is lame on a fore or hind leg. There is, on some part of the body—on the quarters or about the joints—a painful swelling, which causes the animal to be dead lame, or very loath to move. The back and loins are exquisitely tender to the touch. Swellings appear about the back, shoulders, and loins, crackling when pressed upon, due to decomposition of the tissues and the generation of gas. The skin in patches becomes hard and dry, and subsequently sloughs off, leaving an ugly, unhealthy sore, which discharges offensive matter. At the same time, the mouth and tongue become ulcerated, and a stinking, bloody fluid drops from the nose and mouth. Diarrhœa sets in, and the animal dies from exhaustion.

This disease may be prevented by placing young stock in sheltered comfortable quarters, carefully avoiding overcrowding, imperfect ventilation, and accumulations of excrement. Linseed cake, good hay, turnips, and salted water should be the diet. It is believed that even the most virulent and infectious diseases, the cattle plagues themselves, take their rise originally in a deprivation of *salt* in the vast Steppes of (European and Asiatic) Russia.

300. Treatment.—Medical treatment has little chance of success, chiefly in consequence of the virulence and great rapidity of the malady. However, the following remedies may be used, according to the indications given; and they will do all that can be done in these disorders.

Ammonium causticum.—In the early stage of splenic apoplexy, when the balance of the circulation is disturbed, and the blood begins to stagnate in the spleen. Mix one part of the strong liquor with seven of water, and of this mixture give ten drops every half hour. In this as well as in the other forms of carbuncular disease, this remedy is called for when the breathing is quick and heaving, the nostrils expanded, and the muzzle dry. For other indications of this most important medicine consult the Materia Medica.

Belladonna and **Rhus** may be given in alternation, as soon as the local swellings appear.

Mercurius and **Rhus** may be given in alternation, when the mouth and tongue are severely ulcerated, and there is a copious discharge of saliva, or of bloody fluid.

Arsenicum will be required when there are prostration of strength, purging, pains in the bowels, bloody discharges from the mouth.

These remedies may be given to cattle in ten-drop doses, and to sheep in four-drop doses, repeated once an hour or two hours, according to the violence of the symptoms.

Carbolic acid lotion (one part of the strong solution of Carbolic acid to twenty of soft water) should frequently be applied to the swellings and sores, and especially to the ulcers remaining after the sloughs fall off.

301. Carbuncular Diseases in Pigs.—One form is analogous to the gloss-anthrax of cattle and sheep. The reader will find a description of it at page 198. The second form is described in Nos. 451–53. The third form, believed to belong to the anthrax family, is commonly known as the "blue disease," "distemper in pigs," "hog cholera," &c. It begins with dulness, loss of appetite, holding the head low; then the animal lies on its belly and evidently suffers from pain there. Retching or vomiting of food, bile, or mucus is a common symptom. In some cases we observe drowsiness; in others delirium. The skin, especially about the back, belly, inside of the legs, is of a blue or purplish color. Symptoms of paralysis of the hind legs appear; the surface becomes cold; and death may take place in a few hours.

In this disease, give *Belladonna* when the animal is excited, in pain from colic, and when the rash comes out. *Rhus* is also good when the rash appears and there are symptoms of prostration. *Arsenicum* for diarrhœa. *Belladonna* and *Rhus* for paralysis.

Dose.—Six drops every two or three hours.

Prevention of these forms of disease among pigs should be sought for by thorough cleanliness, removal of all filth, clean bedding, sluicing the body with cold water, allowing exercise, and admitting air. Sound food of both vegetable and animal nature should be given. When the disease breaks out in a lot, the animals should be separated as much as possible, and the diseased ones removed.

LICE, TICKS, AND FLEAS.

Vermin, spontaneously generated, or arising out of the imperceptible deposit of ova, constitute what may be termed a positive malady amongst cattle, sheep, and pigs in particular. All animals are known to generate and harbor vermin to a greater or less degree, but in few instances does it amount to so much like a disease as in the lice of cattle, sheep, and pigs, and in the ticks of sheep.

302. Lice on Oxen, Cows, &c.—*Causes, &c.:* The most positive ascertained cause for the presence of these insects appears to consist of deficient, unwholesome, and impoverished food. In proportion as the animal loses condition and health are lice engendered and propagated, and the after-effects which follow are often yet more seriously developed in mange. The next cause to spontaneous generation is contagion; for, except mange, nothing is more easily communicated than vermin. They also originate, as it is said, in animated particles floating in the atmosphere, and deposited upon the coat of the animal. The mere fact of grazing on the same pasture, lying upon the same litter, or the most casual contact, will propagate them from one animal to another. Scurfiness and mange ensue from their inordinate abundance.

Lice on Sheep.—The insect which, under this denomination, infests the wool and skin of sheep, is of a peculiar and distinct character, and appears to be associated with various scabious eruptions, and to engender an eruption of the kind which is peculiar to the product of the insect, but which readily degenerates into specific scab. The causes are of much the same kind as those which promote the generation of lice upon oxen, &c.

Lice on Pigs.—Filth will engender the lice peculiar to pigs, and they are distinguishable from those which infest other animals, insomuch as they are not only superficial, but subcutaneous, burrowing from place to place beneath the skin, and producing a scabby eruption of the nature of mange, and sometimes severe ulceration.

303. Ticks of Sheep.—The tick, from its habit of fastening upon the most tender and delicate parts, and there diving into the flesh, and adhering, as it swells and grows out of the very vitality of the sheep, as well as from the uneasiness and restlessness which it occasions, causes very serious detriment to the animal.

External Treatment.—The best known remedy for lice and ticks consists of the following lotion:

Application.—To one part of tincture of Tabacum add ten parts of water, and of this solution mix equal parts with vinegar, wherewith thoroughly saturate the hair.

Thoroughly soaking the skin, wool, and hair with olive oil, and subsequently washing with soft soap and warm water, constitutes a method more harmless to the animal and equally destructive to the vermin.

Carbolic acid solution, one part to twenty of soft water, and used as a liniment, will destroy all the parasitic vermin with which it is brought into contact.

and beneath it; there is apparently considerable debility; the animal is slow and languid in its movements, or it is perverse and very stupid; the skin appears to thicken generally; the hair is more or less detached; the appetite is often apparently unaffected, and the respiration does not manifest any symptoms of disease; sometimes, however, the interior of the cavity of the mouth loses its natural color, and is even characterized by the appearance of bluish livid blotches; the gait is staggering and uncertain, and as this symptom increases, the whole of the hind quarters becomes paralyzed, and the animal falls sideways upon its hams, and sustains itself on its fore legs only; the bristles are detached spontaneously, or with the slightest friction, sometimes with the exudation of blood; the roots of the hair are characterized by tumefaction, and even by the development of ulcers. The breath and even the exhalations from the body are excessively offensive, and we may, moreover, observe a very small, generally irregular, and sometimes wiry pulse, tumors in various parts, dislodgment of the skin in large pieces, grinding of the teeth; general swelling of the body; blackness, swelling, and heat of the tongue; slimy and adhesive salivation, &c. If a leprous pig be killed, the flesh will be found flabby, discolored, and insipid.

Treatment.—Consult the Materia Medica, for the purpose of selecting appropriately from amongst the following remedies (which embrace the treatment of leprosy of cattle, and leprosy of pigs): Arsenicum, Baryta Carbonica, Calcarea carb., Carbo veg., Digitalis, Graphites, Hepar sulph., Lachesis, Ledum, Lycopodium, Natrum m., Nitri acid, Petroleum, Phosphorus, Phosphor. acid., Sepia, Silicea, Sulphur, and Veratrum; also China, and Kali carb.

Dose.—For cattle ten drops, and for pigs six drops of the selected remedy, should be given three times a day.

306. Mange in Horses and Cattle.—The mange or itch in the horse results from the operations of minute insects, which attach themselves to the skin. These are of three kinds, the *Sarcoptes equi*, which burrows in the skin; the *Dermatodectes equi*, which bites and fastens itself to the skin; and the *Symbiotes equi*, which penetrates no further than the superficial layer of the skin. The first closely resembles the *Sarcoptes* of man, both in its appearance, and in the general features of the eruption to which it gives rise. By some late authorities the disorder known as mange in the horse is attributed to the *Acarus scabiei* alone; this is but another name for the *Sarcoptes* or itch insect just mentioned.

It can live on man, and excite an eruption, which is identical with that of human itch, and which may disappear spontaneously. Grooms attending "mangy" horses have been known to suffer from horse itch caused by the *S. equi*. Cattle, also, are affected by it, but experiments have as yet failed in transmitting it to sheep, dogs, pigs, and cats. The second parasite is the special itch insect of the horse, as, if transmitted to the skin of other animals, it speedily dies. In the horse, it gives rise to itching, loss of hair, and a scurfy condition of the skin. The third is found in clusters especially about the horse's heels; then the animal rubs one leg on the other, stamps with his feet, attempts to bite the part, &c., and crusts of scurf form. It is also peculiar to the horse and cannot live on other species.

There is still another variety of itching skin disease in horses, from insects, occasioned by the dropping of a particular louse from fowls upon their backs, or other portions of their bodies. In every case of mange in horses with excessive itching, it will be proper to observe if any fowls roost in such a manner as to be able to occasion the difficulty.

It is a matter of question whether the want of cleanliness will actually engender mange in the horse, although a careful regard to cleanliness will go far to facilitate its removal. There are few, if any, cases of mange (amongst horses) which can be traced to filth as a principal cause, although inattention in this respect will inevitably engender very serious organic complaints. In the case, however, in which a stable, previously inhabited by a mangy animal, has not been very thoroughly cleaned, ventilated, disinfected, scoured, or even painted and whitewashed, the neglect of these precautionary measures in respect of cleanliness, will almost inevitably propagate the disease. Contagion, either from other horses, by the slightest contact, by contact with the clothing, implements used in dressing, or litter, which may have been applied to the uses of a mangy horse, are amongst the frequent causes of the disease. But its primary origin is attributable to scanty, impoverished, or unwholesome food, whereby the blood is deteriorated or diminished; leanness is, therefore, not an unfrequent precursor of, and is usually an attendant upon, mange. Arid, dry, scanty, and insufficient pastures, with an inadequate supply of water (especially during the prevalence of heat), or straw-yards in which the animals are left to shift for themselves amongst the mere litter, for food, without a sufficient supply (if any) of fresh or nourishing food, are the hotbeds of mange.

It is important to bear in mind, first, that mange is not primarily a skin disease, but the result of insects being allowed to lodge in the skin; and secondly, that the skin, either from want of grooming or from poverty of the blood or system, or from the effect of unsuitable food, or from some or all of these causes, is generally, and perhaps we might safely say, must be in an unhealthy state, before it is in a condition suitable for these parasites to live in and breed.

Young horses taken up from grass, especially if poor, are sometimes found to be affected with the mange insect, but more commonly with lice.

Mange never occurs in healthy, well-groomed, well-fed horses. It is a sure sign of neglect and dirt, or of injudicious feeding, or of bad management of some sort. The owner will do well to change his servants, whenever this disease appears in his stable.

Mange is not contagious among healthy and well-groomed horses. It is very possible, that some of the insects may find their way from a diseased to a neighboring healthy horse. But they will not remain, they will not lodge permanently, still less will they breed in a skin, to which the brush is well applied and in which they are in consequence disturbed two or three times a day.

Horses, however, in a debilitated or neglected state are very susceptible of this disease, and among such it is very readily transmitted from one to another. Hence when circumstances, which are more or less common to all the animals in a stable or camp, engender this disease in one horse, it is necessary that he should at once be separated from the others. The brushes and clothing must also be kept separate.

Mange usually commences at the roots of the hair of the mane and tail. As stated above, it is caused by the presence of insects. Multitudes of minute pustules appear, whose summits gradually expand into vesicles, which burst and coalesce with one another, and by their united discharges form patches of incrustation upon the skin. At these patches the hair loosens at its roots, and either falls out or is rubbed off from time to time, and at length the place is left bare. The follicles of the hair desquamate in the form of bran-like scales or meal-dust. Upon these patches small red spots may frequently be seen, owing to the crust being rubbed off the pustules, and consequent exposure of the inflamed cutis.

The skin loses its elasticity, and becomes corrugated with harsh arid folds, especially about the neck and sides. Sometimes blood oozes from the bare places. The disease is accompanied with intolerable itching.

In cattle, mange is also caused by insects; two of which are similar to, but not the same as those affecting the horse. These are the *Symbiotes bovis*, which locates itself about the anus and root of the tail; and the *Dermatodectes bovis*, which infests the skin along the back from the head to the tail. This is an extremely contagious malady; it chiefly affects the back and neck, and is indicated by rubbing and scratching, with the hair dropping off after the production of small bladders which break. A discharge flows which is often irritant; at other times the skin is hard and dry. The moist mange is observed in cattle in good condition, and the dry in lean stock.

Amongst cattle, the presence of mange is first described at the tail, whence it spreads particularly about the back, and sometimes, also, throughout the body. Before any appearance of discoloration or decidence of hair or skin occurs, the animal is observed to be continually rubbing and scratching itself. Unlike mange amongst horses, however, we do not at any stage distinguish the presence of much scabbiness or ulceration; but simply patches of scurf, thick, and easily detached, sometimes extending in distinct lines on either side of the spine, the hair being more or less dislodged wherever these patches of scurf are developed; the milk is always diminished, and often, if not generally, becomes tainted or impoverished; the animal loses flesh, feeds badly, and ruminates without regularity or energy; the ridge of the spine assumes a keen, curved, and elevated appearance in respect of the flanks, and the skin becomes generally flabby.

307. Scab or Mange in Sheep.—The scab in sheep is presented to us under a variety of aspects. Sheep of different breeds, and particularly of different districts, are subject to the same disease under certain particular modifications. But, as these differences do not in any way affect the pathology of the disease, they are very unimportant to the reader. We will, therefore, rest satisfied with the particularization of three kinds of scab, viz.: 1. That which is clearly attributed to the presence of acari, the *Dermatodectes ovis*. 2. That which partakes rather of an erysipelatous character, and which appears to us rather as an acute cutaneous inflammation than as scab properly so called. 3. The subcutaneous scab, which offers no external signs of its existence, and in which the symptoms are necessarily obscure.

The most prevalent cause, as in the case of other animals, but still more of sheep, is infection, which often appears to appertain to a locality or particular pasture, when, in truth, it is communicated to the sheep of a fresh flock (after the scabby sheep have been removed) by their rubbing themselves against the very fences, &c., against which the diseased sheep have previously rubbed themselves, and where the latter had deposited flakes of wool. It is excessively contagious. Neglect and inattention to the requirements of sheep, which are wholly dependent upon their masters, will engender scab; particular seasons, such as the whole extent of the spring, are characterized by the greater prevalence of scab; undue exposure to moisture and cold, and anything which may serve to check the transpiration of humors; severe driving; and above all, unwholesome food, will engender the disease. The deficiency and impoverished nature of the food more frequently occasions it amongst sheep than the reverse; but sudden changes from the one to the other will produce it.

It is not unimportant to notice that the progress of development is very uniform, and is well ascertained; the infection having taken place (as of sound sheep having been penned where scabby sheep had previously been), we may look for the manifestations of uneasiness and irritation in the course of from ten to fifteen days.

Symptoms of Acarous Scab.—The sheep are observed to be continually rubbing and scratching themselves against any hard or harsh substances, such as hurdles or other fences, close-trimmed thorn hedges, &c.; and, upon examination, we shall detect about the shoulders, and along the back (if nowhere else), the development of innumerable small, miliary, clustering, pustules, conveying the sensation of gritty elevations to the touch. These will gradually extend to other parts, and become general; the wool will be readily dislodged in patches by friction, and will become dry, harsh, and very brittle; four or five days after their first appearance, these pustules will break, and exude a peculiar lymph, immediately concreting into patchy scabs, beneath which, if disturbed, we shall find a superficial sore; the animal will lose condition, become more or less feverish, and lose its appetite; the rumination will become irregular, and sometimes even (in severe cases) the appetite will entirely fail, and the rumination cease, when rapid loss of strength and flesh, or sometimes death, ensues.

Symptoms of Inflammatory Scab (erysipelatous).—The eruption in this case consists of vesicles, not of pustules, and the course of the disease is neither so slow nor so insidious; the vesicles are charged with a very thin but bloodstained lymph, and as they break, and the lymph exudes, blackish scabs are formed on the surface.

Symptoms of Subcutaneous Scab.—The term scab is a misnomer in this case, for it is rare that any morbid appearance can be detected on the skin; the skin is occasionally red, but this would neccessarily be occasioned by the savage manner in which the animal scratches and rolls itself;—it appears to be increased by good feeding;—the wool is shed in large flakes, but the skin seems sound beneath; an extraordinarily rapid emaciation takes place, and sometimes we may notice the movements of a frenzied or delirious animal; in fact it would appear to be an internally inflammatory disorder of no moderate character.

308. **In Dogs** a dry or moist mange, corresponding to that of cattle, is observed. The first, which is seated chiefly in the back, is accompanied with violent itching; the skin is red, covered with scales and excoriations, and secretes a reddish fluid, which corrodes the roots of the hair. The second comes on after swelling and redness of the skin; with secretion of thick, puriform matter, and the formation of ulcers and thick scabs. The *Sarcoptes canis*, or itch insect of dogs, can live on man's skin. The other parasite on dogs is the *Demodex folliculorum*, which resides in the sebaceous and hair follicles.

Various causes, of the nature of those already mentioned in the foregoing remarks (saving that they be consistent with the habits of the animal), will engender mange. It is inherited, and descends from the mangy bitch to her pups. It may be produced by particular atmospheric influences, unwholesome air, and ill-ventilated kennels; but especially by the nature of the food, the absence of sufficient liquid,—rancid, fatty, and even stimulating food, seasoned food, and also want of sufficient exercise, and confinement in close and hot places; or by deficiency or poorness of food; or by sudden changes from very insufficient to excessive feeding; contact and infection, of course, will communicate it.

There are several varieties of mange more or less prevalent amongst dogs: such as scabby mange (the more common): Red mange, characterized by general and severe inflammation and redness of the whole surface; strong febrile symptoms; the sudden appearance of elevations in the scarf-skin, becoming confluent, swelling considerably, and degenerating into ulcers; discoloration of the skin and hair in blotches (whence the hair drops off, the skin being left bare, rust-colored, scabby, or rough), which extend on all sides, and assume an ironmouldy, reddish-brown color; excessive and intolerable heat and itching (which is evidently also painful) over the whole body, but especially in the parts in which the eruption is developed; sometimes the exudation of a peculiar yellowish-red lymph, which concretes on the surface and forms into scabs: Colorless mange (a most intractable and insidious variety), in which the intense restlessness, evident itching and pain, rapid loss of flesh, forward temper and dejection, are unaccompanied by the least trace of discoloration, or are attended with so little either of discoloration or of redness of the skin, as to induce a doubt as to the nature of the disorder: Mange which affects particular parts only, and which is generally confined to itching, with the development of a few scabs upon the back: scabby mange, as its name denotes, is characterized by the more general development of this particular symptom. To these may be added erysipelatous mange, or mange having the character of erysipelas, which is a mere modification of the usual acute mange, and is characterized more especially by the swelling of the parts affected.

309. **Pigs and Cats** are also afflicted with itch insects, which can live on the human skin.

The causes of mange amongst pigs may be traced to one or the other of those already noticed in respect of other animals. But pigs are not generally so subject to this severe disorder.

The appearance of a pustular eruption close to the junction of the fore legs with the body, and also on the inner side of the thighs; the pimples at first separate, become confluent, ooze, and concrete into large scabby surfaces, which, being dislodged by the violent friction to which the animal continually resorts for relief, leave behind them extensive sore places in their stead.

310. **Treatment.**—This, as in many other difficulties, consists of two indications: first, to remove the cause; secondly, to cure the remaining consequences, the psora or constitutional disease, that either simply results from the presence of the parasites or favors their development.

Many methods have been resorted to in order to drive away or destroy these insects.

Sulphur Ointment: Sulphur one part, lard six parts, by weight, thoroughly rubbed together, has long been used; and it is very appropriate, in connection with the internal use of Sulphur, when parasitic insects appear. But lately other means have been found more quickly efficient. These are the so-called antiseptics, which are fatal to all minute forms of insect life. The most used of this class are *Benzine*, (or Kerosene, Coal oil,) and *Carbolic acid.*

Benzine has proved very harmless and effectual, especially in sheep. First clip off the hair or wool, and wash the whole body thoroughly with soft soap and warm water; then dry the skin, and, lastly, rub in the Benzine. One thorough application is usually sufficient; but it can be repeated if necessary.

Carbolic acid offers a still more powerful, and in some respects a less objectionable means of destroying these noxious parasites. Col. Fitzwygram, whose account of the mange in horses we have quoted, advises that the affected parts be dressed with a solution of *Carbolic acid* in the proportion of half an ounce of the acid to a pint of water, or one part to thirty-two. One dressing, he remarks, is generally sufficient. After forty-eight hours it may be washed off.

In slight and recent cases the skin will soon recover its tone when the insects are got rid of, and the hair will grow again. But in the more inveterate cases removal of the vermin forms only the first step towards a cure. Many of these affected animals have evidently been neglected; poverty, with its necessary adjuncts of starvation and dirt, have combined with the disease, to which in part at least they gave rise, to bring the patient into an enfeebled condition. Hence the need of constitutional treatment in order to bring up the general tone of the system as well as to cure the skin diseases.

Sulphur.—Either with or without its co-operating external use as an ointment, Sulphur proves the main remedy. *Moist itch* especially requires this remedy. In this form the ointment should never be applied externally until the internal exhibition of the remedy has been continued for some time. But in all those cases in which the itch insect has been destroyed, either by Benzine or by Carbolic acid, the Sulphur ointment will scarcely be needed.

Dose.—For horses and other large animals, ten drops three times a day in a little water. For sheep (and goats) and pigs, six drops; for dogs, four drops, night and morning.

Sepia.—Specific in dry itch, or mange. May be employed after Sulphur; or it may be followed by Sulphur, if either alone prove insufficient.

Arsenicum.—Scabby sores, red, inflamed, and burning, or ulcers with hard-crusted edges. Very necessary for scab and mange of sheep and horses, and itch of other animals, when they are run down and in a low condition generally.

Carbo vegetabilis.—Obstinate itch, especially when accompanied by a cough.

Dulcamara.—When the diseased part is covered with a furfuraceous desquamation (falling off of bran-like scales), and the hairs fall off on the shoulders and forehead.

Staphysagria.—When the eruption is on the tail, given in conjunction or alternation with Sepia (if the eruption be dry), or with Sulphur (if the eruption be moist).

Mercurius will be needed if there are raw sores, or formation of pustules.

Hepar sulphuris.—When there is a tendency to suppuration.

For the mange of horses, consult the Materia Medica, and select a remedy in accordance with the following general indications:

If dry: (1) Mercurius and Sulphur (alternately), or Sulphur (alone), followed, upon change of symptoms, generally by (2) Carbo veg. or Hepar, or even by Causticum, if pustules appear, followed again, if necessary, by (3) Sepia or Veratrum.

If pustulous: (1) Sulphur and Lycopodium (alternately), followed, if ineffectual, by (2) Causticum; followed again, if ineffectual, by (3) Mercurius. Or, if after (1) Sulphur and Lycopodium, dryness supervenes, follow up the treatment with (2) Carbo veg. or Mercurius.

If previously mismanaged, under allopathic treatment, with excessive use of Sulphur (internally), or Sulphur ointment (externally), Causticum or Mercurius: if previously treated with excess of Mercury and Sulphur (internally), or with Mercurial and Sulphur ointment (externally), Causticum, China.

If with the development of large vesicles, whether of a dirty yellow, or bluish or violet hue, Lachesis.

If with the development of ulcers, Rhus toxicodendron; if scaly, Sepia,—or, variously, Lycopodium and Muriat. acid.; or, Rhus toxicodendron, and Sepia, in alternation; or, separately, Aconitum, Agaricus, Antimonium crudum, Arsenicum, Belladonna, Bryonia, Calcarea, Carbo veg., Causticum, Kali carbonicum, Ipecacuanha, Lachesis, Lycopodium, Mercurius, Muriat. acid., Phosphori acidum, Rhus toxicodendron, Sepia, Sulphur (which is the direct specific, and embraces the largest compass of symptoms), and Veratrum.

Doses.—If the medicines are required in alternation it will be necessary to give two doses of the one, successively night and morning, then to pause two days, and give two doses of the other, similarly, and to continue this method of administration for ten days; then pausing for four more days to watch the fuller development of effect. If the medicines are to be given singly, they should be given night and morning, daily, for a week at a time, with a pause of four intervening days, after every such course, before renewal. If it be requisite to change the medicine, an interval of two days must be suffered to elapse between the last dose of one remedy and the first of the other.

For the mange in oxen and cows study particularly:

Carbo veg., Calcarea carb., Causticum, Cuprum a., Mercurius, Sepia, Silicea, Sulphur (which embraces the greatest range of symptoms), and Veratrum; and, also, Antimonium crudum, Arsenicum, Belladonna, Conium, Graphites, Helleborus nigr., Hepar sulphuris, Kali carb., Lycopodium, and Pulsatilla.

For scab in sheep consult the Materia Medica, and find the medicine most suited to the variety of scab amongst the following remedies (especially for acarous scab):

Antimonium c., Causticum, Carbo veg., Hepar sulphuris, Lachesis, Lycopodium, Mercurius, Rhus, Sepia, and Veratrum; and also Arsenicum, Dulcamara, Petroleum, and Tartarus emeticus.

Doses.—The administration should be regulated according to the directions given for the treatment of mange amongst horses.

Local treatment will be found beneficial in many cases. (See "Mange," as regards the horse.)

For inflammatory scab: Aconitum, Ammonium carb., Arnica, Arsenicum, Belladonna, Bryonia, Hyoscyamus, Lachesis, Mercurius, and Sulphur.

For mange in dogs and other small animals, study particularly the following remedies:

Aconitum, Arsenicum, Antimonium crudum, Belladonna, Bryonia, Lachesis, Mercurius, Phosphorus, and Sulphur.

If scabbiness predominate: (1) Lycopodium and Sulphur (alternately), followed, if ineffectual, by (2) Causticum.

Dose in General.—Of the selected remedy give thrice daily ten drops to the larger animals, six to those next in size, and four to the smallest.

The *diet* should be carefully attended to, that it be not too stimulating or irritating. Horses kept on barley are said to be very liable to the mange.

Precautions.—Horses are infected with mange in every possible mode of contact from those diseased; even the hand of the groom may convey the germs of the disorder. Brushes, currycombs, clothing, and harness should therefore be kept sedulously apart, and thus prevented from transmitting the disorder. Sheep, and other animals as well, convey the disease to others from the rocks, posts, and other objects against which they have rubbed themselves. Every precaution should, therefore, be observed to keep the healthy flocks from communicating in any way with those infected. The clothing of horses affected with mange need not be burned; it will be sufficient to boil it thoroughly.

311. Non-Parasitic Mange—Eczema.—This disease is most frequently met with amongst horses and dogs, the latter especially. I shall describe it as it occurs in the dog, premising that the general symptoms are pretty much the same in all animals. When fully developed, diseased patches, varying in size and irregularly circular, are observed on different parts of the body. On the surface of these inflamed patches are clusters of small vesicles, from which a serous fluid exudes, which presently concretes into scabs, and mats the hair together. In a few days the scabs and hair fall off, leaving the skin bare, inflamed, and moistened with exudation. Thin scales form from the drying of this exudation. There is usually considerable and violent scratching and rubbing from the itchy sensation, in which case the diseased surface is covered with some small clots of blood, the result of slight laceration of the skin.

The so-called "acute mange" is ushered in by febrile symptoms, and is characterized by an inflamed and swollen state of the skin. The swollen, thickened state of the skin depends upon infiltration of serum into the meshes of that structure. Vesicular and pustular eruptions follow, and when these burst, the diseased surface presents the appearance of superficial ulceration. When the skin is very much inflamed and irritable, the disease is known as "red mange."

What is called "foul mange" is an aggravated form of the eczema above described. The skin is thickened, and exudes from its inflamed surface a large quantity of offensive serum or pus, or both; it is also chapped, wrinkled, cracked, and superficially ulcerated. The exudation forms thick, yellowish crusts. The hair falls off, partly from constant and vigorous scratching, partly from being detached by the exfoliating scales.

The disease may be localized in certain parts, such as the scrotum, the eyelids, the ears, the feet, &c. When the eyelids are affected, the case assumes all the characters of the ophthalmia tarsi of man, which is a true eczematous eruption. When the disease attacks the ears, it constitutes or introduces the so-called "canker" of that part. When seated between the toes and at the roots of the nails, the dog is lamed, and the part is red, swollen, tender, and moist. Foul ulcerations are apt to follow, especially when the sanitary arrangements are bad, or the general health much impaired.

The puppies of mangy parents almost invariably inherit the same disease. This mange—that is, eczema—is not catching. It is distinguished from parasitic mange or itch by the absence of the acari. It is apt to return periodically, and as it depends on constitutional causes, its duration may be indefinite, and its cure troublesome.

312. Treatment.—*Aconite* is indicated by febrile symptoms; itching over the whole body, and especially about the scrotum; hot and burning skin; small reddish-colored vesicles, with itching.

Rhus.—Redness of the skin over the whole body; swelling of the skin, with an itchy eruption of small, yellowish vesicles, which run into each other and become moist; a scurfy and fissured state of the skin. Rhus is especially suitable when the eruption is situated on the scrotum, the eyelids, and the back.

Mercurius.—Indicated for an eruption at first vesicular, afterwards pustular, which is sometimes dry and sometimes moist, and which itches worst under the influence of warmth.

Arsenicum is indicated for burning heat and itching of the skin; scales, which peel off; reddish-colored pustules, which break and leave the appearance of small, shallow ulcers, with an ichorous discharge; painful blotches. It is likewise indicated for diarrhœa, debility, emaciation, enlarged abdomen—symptoms that supervene upon advanced eczema in dogs.

The following remarkable cure with this remedy is reported by Dr. James Moore: "On examining the horse, I found him covered with an eczematous eruption, scarcely an inch of his skin being free; the skin in some places was rubbed raw and bleeding; in other respects well. He has been in this state for several summers, and what with the friction of the harness, and the excessive itching when he perspired, little or no work has been got out of him. I prescribed ten drops of the third dilution of *Arsenicum* three times a day. Two months afterwards he was quite well, and worked through the summer without any of the old symptoms reappearing. He was sold at the end of the season, when I lost sight of him. Every time the eruption appeared, he was treated allopathically without the slightest benefit."

Borax Lotion.—Made by dissolving one drachm of borax in twelve ounces of soft water, and adding one ounce of glycerin—has proved very efficacious in relieving the severe itching in dogs, which results from non-parasitic eruptions.

Diet.—Farinaceous or vegetable food alone, and that sparingly, should be used in such cases, especially in dogs; cleanliness, good ventilation, and moderate exercise in the open air, are indispensable.

313. Vegetable Parasites, Ringworm.—The production of skin diseases in animals by low forms of vegetable life has not yet received that investigation which the interest and importance of the subject demand. It is however, beyond doubt that our domestic animals are sometimes attacked with RINGWORM, and that grooms attending on horses suffering from it have contracted the same disease. The eruption consists of a greater or less number of patches on different parts of the skin, circular in shape, partially or wholly bare of hair, and dotted with vesicles. Scales form on the surface of these patches, and on removing them there is a slight moisture underneath. The hairs around are altered from their natural color, and dusty.

Ringworm is not connected, as the name might lead us to suppose, with the presence of an insect. It is due to a parasitic growth or fungus made up of organic cells, which affects more especially the hair-follicles on the surface of the skin. The disease may commence in any part. The premonitory symptom is usually an unthrifty look about the coat. A white scaly scurf accompanied with staring of the hairs in the part affected is the first positive indication, followed by a thickened scurf with raised eminences. This spreads rapidly in blotches over the neighboring parts, generally assuming the form of rings, and the hair falls off. The appearance is so peculiar, that the disease cannot be mistaken by any one, who has ever seen a case.

Ringworm usually results from an unhealthy condition of the skin, in most cases produced by neglect of grooming, or by bad food, or by any sudden change of diet, even from bad to good. Occasionally however it appears in stables where both the grooming and the food are unquestionably good.

Damaged oats or hay are very ready causes of this disease. In every case, therefore, the food should be very carefully examined. The oats, in addition to being inspected externally, should be stripped of their husks, with the view of ascertaining whether they have become mildewed *under the surface;* and their state should be further tested by smelling and chewing the grains. The hay should also be looked to, especially with the view of ascertaining whether it is mildewed.

Young horses on first coming into stables are sometimes affected, probably from change of diet. Horses recovering from fever occasionally suffer from this disease. In this latter case, it seems to arise from an impoverished state of the blood.

Ringworm, it is said, can be produced in healthy horses by inserting under the skin a scale of the cuticle from one of the blotches on a diseased horse. In ordinary cases the disease is not very contagious, though generally supposed to be so. It frequently, however, runs through stables, much in the same way as influenza and other diseases, because similar causes produce similar effects.

There is a form of so-called "mange," which has been often observed where diseased straw has been used as bedding. A disease called

"Camp Measles" has been observed in America in man, and has been ascribed to a fungus from diseased wheat straw.

The treatment consists in applying to the patches *Carbolic acid lotion* three times a day; in destroying infecting bedding; and in giving *Arsenicum* in the usual doses, three times a day. Liberal food should be allowed. A bran mash with a pound of boiled linseed daily in addition to the usual food, will exert a beneficial influence on the system and thus facilitate the cure of the local affection. (For remedies, see No. 315.)

314. Surfeit.—Urticaria, or nettle-rash, known as surfeit, is very common in horses, less so in oxen and other animals. It is said by Blaine to come on in connection with that condition of the skin and subcutaneous cellular tissue which is called *hidebound.* "Sometimes," he remarks, "from a kind of reaction and inflammatory process in the deranged and obstructed vessels, small tumors become formed, generally extending pretty universally over the skin; which affection has received the name of *Surfeit,* and is often erroneously considered as a distinct disease, although a symptom only, being generally dependent on a primary affection of the skin. In a few instances I have, however, traced its origin to a deranged state of the stomach, brought on by eating noxious vegetables, and in some other instances it has been produced by the musty quality of the hay used." It may arise also from overfatigue, and exposure to wet after a long journey,—these influences no doubt producing a temporary fit of indigestion, or such action on the gastric coats as causes the eruption. It is recognized by the sudden appearance of blotches or elevations of the skin, varying in size from a sixpenny piece to that of one's hand, on different parts of the body. There is considerable heat of the skin and itching. In mild cases, the general health is not affected, and the eruption does not continue long; whereas in others there is some amount of feverishness, and the elevations are prone to reappear at intervals for some time.

315. Treatment.—Give mashes, but no corn; and remove all fodder that may be suspected of acting as a provoking cause.

Aconite may be employed if there is much febrile reaction; ten drops every three hours, till this is removed.

Arsenicum.—This is the specific remedy, and will be equally indicated in those cases which arise from simple indigestion, and in those dependent in a measure upon overexertion. It may be indicated also by the animal being in a poor condition, with loss of flesh.

Rhus may be needed when exposure to wet weather is a principal cause of the difficulty.

Dulcamara, Antimonium crudum and **Sepia** should also be consulted in the Materia Medica.

316. Saddle-Galls.—These excoriations of the external cuticle are accompanied by bruising of the deeper structures of the skin, and even of the cellular tissue beneath. *Arnica* lotion—one part of *Arnica* tincture to nine of water—should be applied with a soft sponge or rag, once in four hours, and the injured surface kept covered from exposure to the air or assaults of insects.

317. Warbles.—Warbles are recent soft swellings or tumors, arising from inflammation of the skin, generally caused by friction or undue pressure of the saddle, girth, or collar, on the part affected, or sometimes by bad saddling or bad riding, even though the saddle fit perfectly. The swelling itself is due to a slight effusion of serum or lymph, or of both, produced by the inflammation.

This name is also applied to the swelling so often met with on the skin of oxen, occasionally on that of the horse, from the gad-fly depositing its eggs in the skin; a tumor, often as large as a pigeon's egg, containing grubs and matter, being the result. The back and loins are the favorite places for the fly's operations. There may be several such swellings. During the process of depositing the eggs, the cow is in great fright, and scampers up and down the field in furious excitement.

The treatment consists in opening the swelling, squeezing out the contents, and dropping in a few drops of tincture of *Arnica*, where the tumor is the result of friction of the saddle; or a few drops of the *Carbolic acid* lotion, where eggs of the gad-fly have been deposited.

318. Sitfasts.—When a swelling, such as described in the preceding paragraph, either by neglect or by repeated recurrence of the cause has become hard and insensible, and the skin is permanently injured, it is no longer termed a warble, but is known as a sitfast. The skin becomes thickened and half dead, and is often adherent to the bottom of the sore and kept alive by blood at its root. The sitfast will frequently be found to be partially separated all round from the living skin.

Treatment.—The readiest way to get rid of these troublesome growths is to cut them out. But instead of burning out the wound with lunar caustic, as is commonly advised, apply tincture of *Calendula* to the wound three times a day, giving at the same time six drops mixed thoroughly in a little water.

319. Prurigo.—This is the name given to an excessive itchiness, from no apparent cause, which attacks the horse; it is accompanied by small pimples and heat of the skin. The eruption may appear after the rubbing of the neck, root of the tail, or whatever other part is affected, against some convenient object, until the skin is raw.

Treatment.—If there is reason to suspect the presence of parasitical insects, apply the *Carbolic acid* lotion three times a day. This will cure in many cases; or tincture of Sulphur or Sulphur ointment (made by rubbing a small quantity of flowers of Sulphur with six times its weight of lard), may be applied in a similar manner.

320. Warts.—A wart is an extra secretion of cuticle from the papillæ of the dermis. Warts are of rather common occurrence in the horse. They appear on the thin and more delicate portions of the skin, as, for instance, on the sheath, the inner surfaces of the hind limbs, the abdomen, the eyelids, and the sides of the nose. They seldom appear on the back, hind quarters, sides, or outer surfaces of the limbs. They are sometimes found on the neck, where the skin has been injured by the collar.

They vary in size from that of a pea to that of a large potato. The wart commences as a small round substance, and gradually increases. As it increases, it becomes divided into clefts and fissures, from which the blood occasionally exudes.

The precise causes of these excrescences are not known; but they probably arise from some peculiar derangement of the nutritive vessels which secrete the skin. Others think that they originate in undue vascularity of the true skin, by means of which an abnormal growth is generated. It is certain that after removal they are apt to recur.

Treatment.—Warts should always be removed whilst yet small. It has been recommended to scrape the surface, and then dress it with carbolic acid. Large warts may, however, require to be removed by the knife. Some care is needed in the operation. The divided blood-vessels should, if necessary, be stanched by the application of the hot iron; or better, by Monsell's solution of iron.

In some cases, where there is a small base, the wart may be deprived of its nutriment by means of a silk ligature tied tightly round it, and in due time it will perish and drop off. In other cases, small warts, after an incision has been made in the skin over them, may be squeezed out by the fingers.

But it is believed that neither of these surgical means are absolutely the best; especially since they do nothing towards preventing the return of the warts. Some homœopathic authorities advise the application of the *Arsenical lotion* after the excrescences themselves have been removed by knife or ligature. But the *Carbolic acid* lotion, above suggested, would be preferable. To prevent the return of the warts, give

Calcarea carbonica, ten drops night and morning, to horses and large animals; smaller doses to those less in size.

Causticum, given in the same way, will often cause small warts and wartlike excrescences to disappear without their being touched.

Thuja occidentalis.—For those warts which become divided, and bleed, like sycosis, or fig-warts, in men, the local application of mother tincture of *Thuja* is by far the best remedy, which may also be given internally at the same time. In this manner, without the use of caustic, knife, or ligature, the whole growth is often made to pass away.

321. Erysipelas—St. Anthony's Fire.—Erysipelas occurs in all animals, but most frequently in dogs and sheep. In horses it sometimes supervenes upon cracked heels. In sheep it has been known to follow an injury of the skin inflicted during shearing. In these animals it consists in a swelling of the head, which contains much watery serum. It is accompanied by fever, with heat, great thirst, dejection, and loss of appetite.

In general the animal is more or less feverish—the pulse being quickened, the appetite impaired, the secretions checked, the mouth hot and dry, &c. The skin is covered with a diffused redness and is hot to the touch. The areolar tissue under the skin is likewise involved, giving rise to a swollen condition of the inflamed part. On the decline of the inflammation the skin peels off in thin scales.

According to Gamgee,* Rychner has described a form of erysipelas in cows which he calls "œdematous." Meyer refers to it as *Erysipelas boum*. It occurs chiefly about the hind limbs, the udder, and surface of the belly. It may occur after an attack of epizoötic aphtha, and extend from the feet to the knee or hock joints. The swelling occurs rapidly, chiefly about a joint; it is circumscribed, shiny, very painful, and pits on pressure. The animal is very feverish, and is sometimes only relieved after several days' suffering. The disease often lasts fourteen or twenty days.

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* "Dairy Stock," p. 222.

The same disorder, called by some St. Anthony's Fire, occurs also in the pig, where it is extremely fatal. Sometimes the pig, perfectly well the evening before, is found dead in its sty in the morning. Usually, however, there are morbid symptoms which last from twelve to twenty-four hours; seldom two or three days. The pig suddenly ceases to eat; it becomes restless and rakes up on every side; there appear on the neck, chest, and belly red streaks, which gradually become blue, though in many cases only after death. There are generally observed, also, great heat in the head and difficulty of respiration; on the neck an inflammatory swelling, which occasionally extends to the head, chest, and belly, and which never passes to suppuration. Sometimes there comes on the tongue a round, white vesicle, about the size of a pea, which soon becomes black and eventually proves fatal. Before this vesicle comes on, the animal appears dejected; it holds its head hanging down, continues to lie down, grinds the teeth, and remains stretched almost without feeling. In certain cases, also, there comes on the exterior of the neck a small glandular tumor on which the bristles stare and assume a white color.

In cases where the disease does not prove fatal rapidly, or where it lasts to the third day, there is observed in those animals great weakness of the muscular system. The tail, instead of being rolled up, hangs at its entire length, the bristles stare, the temperature of the body varies frequently. There is constipation, or the excrements are dry and curled. No appetite or thirst. There is considerable heat diffused over the entire body; the animal remains constantly lying down, or staggers when walking. It often vomits what it has eaten, and sometimes yellow lumps also. It rummages, as it were, impatiently in its litter, and frequently throws it up to the roof. The skin swells, and then appears an eruption, which, being first reddish, soon becomes black. The breathing is short and loud. Small gangrenous ulcers are often seen in the mouth, and convulsions close the scene.

322. Treatment.—"St. Anthony's Fire," says Gunther, whose account of this disorder in the pig we transcribe, a disorder which seems to possess many marks of resemblance to the cattle plague, "bears much resemblance to angina, which follows a no less rapid course. The two diseases are often confounded. The remedy is *Arsenicum*, of which from eight to twelve doses should be administered, one every ten minutes, or every quarter of an hour. Out of one hundred and fifty pigs treated by me last summer, only two died of it. I have succeeded in saving some which were considered to be, as it were, dead. *Arsenicum* also acts as a preventive, and I have almost invariably found great benefit from it. In every instance where I have treated diseased pigs, I make such as have been spared take this medicine once a day, for eight days, and not one of them has ever been affected with the disease."

Belladonna and **Rhus** are advised by others, to be given in alternation, in this disorder; twenty drops for horses and cows, ten for sheep and pigs, and four to ten for dogs, every four hours. But this prescription is rather suited to the disorder as it occurs in horses and cattle, or sheep, and not to the most malignant affection above described by Gunther, and for which he found *Arsenicum* so certainly curative.

CHAPTER IX.

AFFECTIONS OF THE URINARY ORGANS.

INFLAMMATION OF THE KIDNEYS, OR NEPHRITIS—IRRITATION OF THE BLADDER—INFLAMMATION OF THE BLADDER, OR CYSTITIS—INFLAMMATION OF THE NECK OF THE BLADDER, OR SPASM OF THE BLADDER—RETENTION OF URINE—DYSURIA—HÆMATURIA—CALCULI.

323. Inflammation of the Kidneys, or Nephritis.—Inflammation of the substance of the kidneys, otherwise called nephritis, is fortunately rather rare. Its causes will generally be found in prolonged or severe work; or in exposure to wet and cold, producing derangement of the secretions of the skin; or in overviolent or too frequent doses of diuretic medicine; or in mow-burnt hay, kiln-dried oats, or other irritating food. It may also be brought on by sprain of the psoæ muscles, or in other cases by the presence of calcareous matters in the kidneys. It may result from blows or other external injury, or from a sprain of the loins.

Occasionally nephritis occurs as a sequel of bronchitis, pneumonia, influenza, or laminitis—probably owing to the secretions of the body, which had been arrested during the acute attack, being afterwards discharged in overlarge quantities through the kidneys. It is also found as a sequel of rheumatic affections. Sometimes it is induced by the absorption of the active principle of cantharides from a surface to which that substance has been applied. Inflammation of the bladder may also extend along the ureters to the kidneys.

The horse is feverish, restless, and uneasy, and perspires freely. He often lies down cautiously and rises up again, as if suffering from colic; but the abdomen, instead of being hard and distended as in that disease, is tucked up. He moves with caution and experiences temporary relief from lying down, but is not relieved by hand-rubbing. Owing to the pressure of the psoæ muscles on the inflamed kidneys, he is unwilling to move,—he stands with his legs wide apart, crouches and straddles in his gait, and groans if turned sharply round. Tenderness and wincing are evinced on the application of pressure to the loins. At frequent intervals he stretches himself cautiously, as if about to stale, but passes no urine, or only a small quantity, highly colored and often tinged with blood. In very acute attacks, the horse will sit on his haunches, groan, and look round to his flanks. The bowels are usually constipated, and the pulse is accelerated and soon becomes very quick and weak.

Inflammation of the kidneys is distinguished from a similar affection of the bladder by the secretion being very small and emitted with much groaning and effort, whilst in the latter disease the urine is secreted freely and ejected almost as soon as secreted. In both diseases the bladder is empty.

It may also be distinguished by examination of the bladder by the hand through the anus. If the disease is confined to the kidneys, the bladder, when it can be felt (but it is not easy to find it, inasmuch as it is empty), will not feel warmer or more tender than usual; but if the bladder is the seat of inflammation, it will be very hot and tender. The kidneys themselves may be felt; and if inflamed, they are hot and painful.

When the inflammation is caused by the presence of calcareous substances in the kidneys, a very marked symptom is afforded by the penis hanging pendulous and a constant dripping of urine often tinged with blood. If the patient be a stallion, the testicles are retracted. The thigh on the side of the inflamed kidney, if only one be affected, is generally benumbed. If the disease is not relieved, the strength fails rapidly, and from retention of the constituents of urine in the system the skin often acquires a urinous smell. The retention of these matters in the blood exerts a poisonous influence on the system, and often produces coma and paralysis.

324. **Treatment.**—In this affection, much more than in many others, regard must be had to the cause.

Rhus tox. will be required in nephritis from a severe strain, especially if accompanied by exposure to wet.

Arnica will be needed in inflammation of the kidneys, from bruises, blows, or other external injuries.

Camphor must be administered in ten-drop doses of the mother tincture, or strong alcoholic solution, every half hour, till relief is obtained, and then once an hour, in cases of nephritis caused by the use of fly-blisters (cantharides).

Aconite will often be required at the outset, when the fever is of a high grade, the distress great, urination almost impossible, and the pulse is hard, with febrile excitement. Twenty drops of the mother tincture have, in extreme cases, been found of infinite service. In less critical cases the dilution may be used in the usual manner as directed in p. 34 of this work.

Cantharis.—The main remedy for pure uncomplicated nephritis. It may be well given in alternation with Aconite, when the following symptoms are present (and not caused by fly-blisters):

Loss of appetite; fever; constant straining to pass urine, which only comes away in very small quantity; urine dark color, bloody; tenderness to slight pressure on the loins; the region of the kidney feels hot; he stands with both legs wide apart, as if about to stale.

Mercurius corrosivus.—Indicated in the advanced stage of the disease, when there is reason to believe the urine is *albuminous* (that is, when it will coagulate, or any part of it, on boiling); when matter is already formed as shown by a purulent sediment from the urine; or when the kidneys themselves are enlarged.

In addition to these, the following named remedies may be consulted in the Materia Medica, as they all have important nephritic and urinary symptoms: *Hyoscyamus*, *Digitalis*, *Lycopodium*, *Nux vomica*, indicated by colicky pains, and in nephritis caused by improper food; *Phosphoric acid*, *Sepia*, and *Sulphur*.

Dose.—Where not specially stated above, ten drops of the selected remedy should be thoroughly mixed with one pint of water, by shaking the whole in a quart bottle; of this mixture give one or two wineglassfuls once an hour till some relief is obtained, then once in three hours. A few doses of *Nux* (at night), and of *Sulphur* (in the morning), will greatly aid in completing the cure, and in obviating any tendency towards a relapse.

325. Irritation of the Bladder.—Irritation of the bladder may arise from excessive doses of diuretic medicine, from absorption of cantharides too freely applied for blistering purposes, from sympathy with inflammation of the kidneys, from overlong retention of urine, from calculi, from strain of the psoæ muscles, affecting the kidneys and the bladder by sympathy, from a sudden check to the cutaneous perspiration by exposure to cold when the animal is hot, or from bad or irritating food.

If the case is of a persistent nature, the state of the bladder should be examined through the anus, to ascertain if there be a calculus in it.

Irritation of the bladder is indicated by restlessness, frequent straining, protruded penis, and by the passing at short intervals of small quantities of urine. If the symptoms are more grave than the above, it is probable that the disease has passed from the stage of irritation into that of inflammation of the organ. The bladder on examination through the anus will be found either shrivelled up and empty, or hot and tender.

Treatment.—**Aconite**: This remedy will be indicated by the excessive restlessness.

Belladonna may be given if Aconite fail.

Camphor.—When there is reason to suspect poisoning from absorption of cantharides (fly-blisters), camphor should be given in ten-drop doses of the alcoholic solution on a piece of stale bread. See also the treatment for inflammation of the bladder.

326. Inflammation of the Bladder, or Cystitis.—Inflammation of the bladder itself is very seldom met with. When it occurs, it is generally consecutive on irritation of the organ, or it may be induced by sympathy with inflammation existing in the kidneys.

Inflammation of the bladder is indicated by the same symptoms as irritation of that organ, but they appear in an aggravated degree. There is restlessness, with arching of the back, whisking of the tail, frequent straining, and a protruded penis. At short intervals a few drops of urine, which is generally thick, high-colored, and mixed with ropy mucus and pus, will be passed with difficulty. In some instances blood may even be voided. In protracted cases the skin of the neighboring parts becomes scalded by the continued dribbling of the urine. Occasionally the animal lies down, as if suffering from colic. If the hand be introduced into the rectum, the bladder will be found shrivelled up and empty, and oftentimes hot and tender; and upon the application of pressure to it, the patient will wince and strain violently. During the voiding of the urine, some few dung pellets may be passed. The skin is hot and dry, and the animal often looks at his flanks.

If the disease is not relieved, the walls of the bladder will lose their contractile power; and in such cases the bladder may be found full, but this would only occur in the last stage. The bladder may rupture through overdistension.

The treatment in most respects is the same as that recommended for nephritis. The case is quite as urgent, and every precaution pointed out in that disease should be adopted in this.

The condition of the bladder should be ascertained at an early stage of the disease. If much distended, gentle manipulation and pressure per rectum will evacuate it, if there be no obstruction from calculus, or unless the neck of the cyst is inflamed or spasmodically contracted. If the disease be due to the presence of calculi, nothing but an operation promptly performed can give relief.

327. Inflammation of the Neck of the Bladder—Spasm of the Bladder.—Inflammation of the neck is more common than inflammation of the body of the bladder. Its prominent symptom is retention of the urine on account of the inflamed condition of the orifice through which it ought to pass. Though the neck is principally concerned, yet the inflammation affects more or less the remainder of the organ.

The treatment of the inflammatory attack is much the same as in nephritis. But in addition to such treatment, it will probably be necessary to relieve the retention of the urine by other means. Those means and also the chief signs of retention of the urine will be detailed in the succeeding paragraphs.

328. Retention of the Urine.—In the majority of colic cases the patient suffers temporarily from retention of the urine, owing to spasm of the neck of the bladder. But otherwise the disease is not common in the horse.

It may, however, arise from inflammation of the neck of the bladder, or from calculi in some of the urinary passages, or from want of tone, or from the bladder becoming overdistended with urine, as may some times happen when horses are driven a long distance without stopping, or in the case of animals who will not stale out of their own stables. Retention may also take place in peritonitis, on account of the pain which it gives the animal to use the abdominal muscles in expelling the urine, and also in tetanus. In some cases, especially in prolonged diseases, retention is caused by an accumulation of débris and dirt about the orifice of the urethra.

The symptoms of retention of the urine are great uneasiness, distress and anxiety of countenance, colicky pains, and straining. The pulse is not at first much affected; but if relief is not soon obtained, it becomes quick and hard, and ultimately imperceptible. The patient will frequently stand stretched out as in the act of straining to void urine. He will lie down and rise frequently. Clammy sweats will break out over him. In the last stage the pulse will entirely sink, and the animal may have a little ease before dissolution takes place. In the early stage any doubt as to the nature of the affection may be removed by putting the hand up the rectum and feeling the bladder.

In dogs, retention of urine may arise from paralysis of the bladder caused by overdistension; or from causes above mentioned in the horse.

The *catheter* may be employed in both horses and dogs to remove the accumulation in the bladder for the time, then the medicines suitable to cure the disorder which causes the retention may be administered with good hope of success.

329. Treatment of Inflammation of the Bladder and of its Neck, *or Spasm of the Bladder, and of Retention of Urine.*—For obvious reasons we subjoin under one title the treatment of these various but similar and closely connected affections, prefacing, with regard to retention of urine, that its cause must be sought out and, if possible, removed; if this be found to consist in a stone, or calculus, in the bladder, an operation for its removal will alone give relief.

In cases of *colic*, retention of urine often appears as a consequence, or attendant symptom, which disappears with the cure of the primary disorder.

Aconite will be indicated in inflammation of the bladder, as well as of its neck, when the pulse is quick, and there are frequent desire to urinate, discharge of scanty, turbid or bloody urine, and pain on pressure over the region of the bladder.

Cantharis.—The urine is discharged drop by drop, with much straining; the pain is increased during the act of passing the urine; the region of the bladder is painful and distended.

Cantharis in alternation with Aconite is often curative of retention of urine from spasm of the sphincter of the bladder which may arise from exposure to cold out of the stable over night in horses.

Hyoscyamus will be found especially efficient in the last-mentioned case, if Aconite and Cantharis do not relieve the difficulty.

Belladonna.—Retention of urine from spasm of the bladder caused by other influences than those just indicated, especially by the presence of inflammation in the bladder, or in some adjacent organs.

Nux vomica may be used with advantage in inflammation when Cantharis fails. It is an important remedy in retention of urine from paralysis; or that which arises in cases of colic; or when the bowels are much constipated.

Opium.—Recommended when there is strangury with intervals of rest between the pains; the pulse being small and scarcely perceptible, the animal despondent and apparently asleep, or drowsy.

Arnica has been found useful in cases of retention with heat in the hoof.

Pulsatilla may be employed under similar circumstances, but with coldness of the extremities.

Dose.—Except where the doses have already been indicated (and except where spasm of the bladder, or retention of urine may have arisen from a severe chill or from being overheated, in which case the mother tincture of Aconite may be needed in ten-drop doses every fifteen minutes), the remedies above mentioned may be best prepared by thoroughly mixing ten drops of the selected remedy in one pint of water by shaking the whole several times violently in a quart bottle, and then the medicine should be given in doses of one or two tablespoonfuls for horses and cattle (or teaspoonfuls for dogs) once in half an hour, one hour, or three hours, according to the urgency of the case and the severity of the symptoms.

Warm *flaxseed tea* will greatly assist nature and the medication, in cases of cystic inflammation, strangury, and retention of urine.

330. Hæmaturia, Bloody Urine—Redwater—Blackwater.—Hæmaturia or bloody urine is much more common among cattle, cows especially, than the more pronounced inflammation of the kidneys is among horses. But neither disease is confined to one of these classes of animals.

This condition is of frequent occurrence amongst the lower animals. It arises from blows, sprains, and any manner of injury involving the region of the kidney, caused by overloading, jumping, &c. It is a common symptom of stone in the kidney and bladder, of various diseases of these organs and their appendages, and of purpura hæmorrhagica; and frequently follows calving.

In hæmaturia consequent upon strains, injuries, &c., we find pain in the loins when they are pressed upon, some degree of feverishness, and disease, retention is caused by an accumulation of débris and dirt about the orifice of the urethra.

The symptoms of retention of the urine are great uneasiness, distress and anxiety of countenance, colicky pains, and straining. The pulse is not at first much affected; but if relief is not soon obtained, it becomes quick and hard, and ultimately imperceptible. The patient will frequently stand stretched out as in the act of straining to void urine. He will lie down and rise frequently. Clammy sweats will break out over him. In the last stage the pulse will entirely sink, and the animal may have a little ease before dissolution takes place. In the early stage any doubt as to the nature of the affection may be removed by putting the hand up the rectum and feeling the bladder.

In dogs, retention of urine may arise from paralysis of the bladder caused by overdistension; or from causes above mentioned in the horse.

The *catheter* may be employed in both horses and dogs to remove the accumulation in the bladder for the time, then the medicines suitable to cure the disorder which causes the retention may be administered with good hope of success.

323. Treatment of Inflammation of the Bladder and of its Neck, *or Spasm of the Bladder, and of Retention of Urine.*—For obvious reasons we subjoin under one title the treatment of these various but similar and closely connected affections, prefacing, with regard to retention of urine, that its cause must be sought out and, if possible, removed; if this be found to consist in a stone, or calculus, in the bladder, an operation for its removal will alone give relief.

In cases of colic, retention of urine often appears as a consequence, or attendant symptom, which disappears with the cure of the primary disorder.

Aconite will be indicated in inflammation of the bladder, as well as of its neck, when the pulse is quick, and there are frequent desire to urinate, discharge of scanty, turbid or bloody urine, and pain on pressure over the region of the bladder.

Cantharis.—The urine is discharged drop by drop, [illegible] straining; the pain is increased during the act of passing [illegible] the region of the bladder is painful and distended.

Cantharis in alternation with Aconite is often [illegible] of urine from spasm of the sphincter of the bladder [illegible] from exposure to cold out of the stable over night [illegible]

Hyoscyamus will be found especially [illegible] case, if Aconite and Canth[illegible] discharge of clotted blood, alone or along with the urine. This form is very apt to recur, especially if the affected animal return to work too soon, or be overworked.

Another form of hæmaturia is that which prevails extensively in certain districts, affecting all herb-eaters more or less, and said to be produced by eating various hurtful plants and young trees, including arnica, aconite, digitalis, genista hispanica. At first, the urine is scanty and reddish; subsequently, bloody and discharged with ardent pain. The pulse is quickened, the appetite lost, the mouth hot, and the coat staring—all symptoms of febrile excitement, attendant upon active congestion of the kidney, which may run on to inflammation and abscess.

A third form is met with in animals pasturing on poor, and badly-drained land, and prevails most in wet seasons. Stall-fed cattle, living on turnips, are very subject to it; it is rarely observed where rich fodder is provided. It constitutes what is commonly called *redwater*, so often prevailing amongst cows—a disease characterized by debility and poorness of the blood. And in its more fully developed form, hæmaturia becomes one of the most remarkable symptoms of the Rinderpest or Cattle Plague, already described.

In its milder and more common form this disease may be divided into two kinds, which differ so much, as, in point of fact, to constitute two distinct diseases: viz., Acute Redwater, which is an inflammatory affection of the kidneys; and Chronic Redwater, which is a complicated affection of the digestive functions, and of the liver in particular, but which, nevertheless, for the sake of convenience, we will classify under the same general head. Chronic redwater is, perhaps, more common amongst cattle than the affection of the kidneys, and it is, at the same time also, a more intractable complaint. Not but that acute redwater is also a severe, and often very difficult disease to treat; both are, however, referable to the same general causes, and both appear to assume more or less of an endemic character, occasionally attacking all the cattle of particular districts (not only all those of particular herds), wherever the soil and herbage are of a similar description; or it may constantly prevail at one spot, in a certain district, and never in the nearest adjacent tracts of land.

Acute redwater often supervenes at the close of the period of pregnancy, occasioned by excess of condition, and by overstimulating food, or owing to the negligence of the owner, who does not pay sufficient attention to the state of the digestive functions, and to the manifestations of fever which are gradually developed. Or it may, likewise, supervene shortly after parturition, owing to neglect in the accessory treatment at the time of delivery.

General Causes.—In addition, however, to the above-mentioned particular causes of redwater, the herbage of swampy soil, or, sometimes, of woodland, with a prevalence of acrid plants, such as the varieties of anemones and crowfoots, or ranunculaceous plants, very rank herbage, or the general properties of the pasture, the nature of the food generally, general atmospheric influences (sometimes), or the effect of temperature or atmospheric influence upon the soil, may engender this very troublesome and frequently fatal class of diseases. It is observed to prevail more particularly on some soils, at the spring and fall, when the sun is often very hot during a few hours in the daytime, and when the nights are cold, and the dews very heavy, and very slow to dry up. The height of the summer is the season which is most free from the prevalence of the varieties of redwater, and it occurs in the winter, but comparatively more rarely than in the spring and fall. Excessive drought is occasionally known to cause it, but the more frequent cause is excess of humidity, especially if stagnant, and such as prevails in ill-drained, flat, and low lands. One particular locality is often known to be continually affected with it, except when particular and extraordinary atmospheric phenomena occur, which appear, for a time, to alter its climate and general character.

Gamgee gives the following precise statement of the nature and origin of redwater in cows, which he classes among blood diseases. The truth of this classification will be seen in reference to the cattle plague, where this disorder appears in its worst form, as already stated above.

"The elements of blood occasionally appear in the secretions, most commonly in the urine, and sometimes in the milk. If pure coagulable blood passes from the bladder it may certainly be ascribed to accident or disease of the kidneys, but independently of injury, certain elements of blood transude with the elements of a secretion. This is the case in that very common malady, since the introduction of turnip husbandry in these realms, *redwater in cows.*

"The cause is almost invariably feeding on turnips that have been grown on damp ill-drained land, and very often a change of diet stops the spread of this very troublesome disease in a byre. Other succulent foods grown under similar circumstances may produce the same symptoms, tending to disturb the digestive organs and blood-forming process.

"In the course of my investigations as to the cause of various cattle diseases, and redwater in particular, I have found that it is unknown on well-drained farms and in dairies where turnips are used only in a moderate degree. The lands of poor people furnish the roots most likely to induce the disorder; and I can confirm the statement of the late Mr. Cumming, of Ellon, who in his very interesting essay on this subject,* says, particularly in reference to Aberdeenshire, that it is 'a disease essentially attacking the poor man's cow; and to be seen and studied requires a practice extended with the less favorably situated parts of the country. On large farms, where good stock is well kept, and in town dairies, where artificial food is used to supplement the supply of turnips, it is seldom now seen.'"

Symptoms of Acute Redwater.—The usual symptoms of high inflammatory fever prevail; the flanks heave; the respiration is accelerated, oppressed, and laborious; the ears are very cold, as also the legs and feet; the horns are cold, except at the root; the breath, muzzle, and mouth, are hot and parching; the muzzle is hot and dry; appetite fails; rumination ceases; the back is bent; the loins are peculiarly tender; there is severe straining to discharge urine, with little or no effect, or, afterwards, with discharge of bloody urine, or of pure blood; these symptoms are preceded by bloody and continued diarrhœa, which suddenly becomes suppressed, and is followed by the characteristic discharge of bright red blood instead of urine, and by the most inveterate and indomitable costiveness; the vivid red hue of the evacuated blood changes for a deeper color, sometimes becoming even black, or, at all events, purplish and acrid, and gangrene supervenes; sometimes, however, the blood becomes darker and thicker, without assuming the malignant aspect, or without the excessive fetor, which attends the gangrenous symptoms, when (if it be at the same time more copious, and less frequent, and that the bowels have been relaxed), the change of color in the discharge should be received as a favorable symptom.

Symptoms of Chronic Redwater.—Brownish-yellow suffusion of the skin; dulness, apathy, languor, repugnance to motion or exertion, collapsed sideway appearance of the belly; the animal stands apart, and avoids the rest of the herd; the appetite fails, rumination is suspended; the ears hang listlessly, and become cold; the extremities become cold; the conjunctiva assumes a color similar to that of the skin, of a dark and brownish-yellow, and the vessels of the eye are turgid; the pulse becomes quick, but generally, also, feeble, or small and wiry; at the outset of the disease, or before its development, there are violent, copious, very loose and offensive evacuations, which yield to the most obstinate costiveness as the fever-symptoms become developed; the flanks shrink from the touch, but not so severely as in acute redwater; the flesh fails, and the skin becomes flabby; the urine, in the early stage, is of a yellowish-brown, gradually becoming redder, and then darker brown, until it becomes almost black; there is copious discharge, but slowly effected, and in an attenuated stream, sometimes without straining, sometimes with violent straining; the milk decreases in quantity, and becomes tinged with the characteristic brownish-yellow color; the milk is greatly deteriorated, being rancid, and almost offensive. Sometimes the incipient symptoms of uneasiness, languor, listlessness, loss of appetite, and approaching fever, &c., with diarrhœa, subside all of a sudden, and the animal appears to have been suffering from a casual ailment, which has passed off. This remission may last for weeks, and even months.

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* On Puerperal Redwater in Cows, by Mr. M. Cumming, V.S.: Ellon, Aberdeenshire, Trans. of the Highland and Agricultural Society of Scotland, vol. iv, p. 9.

Blackwater, which is the concluding stage of the former diseases, is to be looked upon with great suspicion, after either acute or chronic redwater, when the discharge becomes very offensive and purulent; it is ever an evil omen after chronic redwater; but, when the offensiveness and admixture of matter are absent (as already stated), blackwater is to be received as an indication of improvement when it appears as the last stage of acute redwater.

This malady may consist in an aggravated form of *redwater*, the urine being very dark in color; but there is a totally different disease, which is known by the name of *blackwater*. It is the Wood-evil, Pantas, or Darn, of many districts in England and Scotland, and though far more severe in milk cows it nevertheless affects oxen and even horses. In Germany it is known by the name Holzkrankheit—Wood-disease—and in France as the Maladie des Bois.

It has been believed due to the wild anemone by some, by others it is ascribed to the poisonous influence of *Lolium temulentum*, but my experience proves that it constantly occurs on pasture in the immediate vicinity of woods, and where cows can partake of the astringent shoots of young trees, especially of the oak.

The *symptoms* are very similar to simple redwater, but we sometimes find discharge of blood by the bowels. There is constipation at first, but diarrhœa towards the latter stage, generally colicky symptoms and evident indications of intestinal irritation. There is great tenderness over the loins; the urine is deeply tinged with blood, and the general disturbance is very considerable, particularly when diarrhœa with hemorrhage from the bowels sets in. The secretion of milk emits a bad odor, and is scanty in quantity. Occasionally convulsions occur, and the animal dies in from three days to a fortnight, in a state of great prostration. *Camphor* may be used as a stimulant when the prostration is great.

331. Treatment.—The affected animals must be removed at once from injurious pastures; those whose ailment may be traced to turnips should be deprived of them, and in their place receive rich and nourishing diet, including linseed gruel, which tends at the same time to nourish the patient and soothe the irritated urinary organs.

Cantharis.—Indicated by bloody urine, or pure blood is passed; much painful straining.

Dose.—Five drops, on crumbs of bread, every two or three hours.

Terebinth.—This powerful remedy will sometimes answer when Cantharis fails. It *causes, and of course cures, hemorrhage from the kidneys*, or hæmaturia. Terebinth may be given in doses of from five to ten drops every hour, or even every half hour, if the flow of bloody urine is quite free.

Ipecacuanha.—In bloody urine deemed by Gunther the principal remedy. Turbid urine, with brickdust sediment. Bloody stools. Loose cough. See Materia Medica for further indications.

Dose.—Five drops every hour or two hours till the patient is relieved.

Camphor.—In the early stage of redwater, with prostration and chilliness, Camphor may be given with the great advantage of promoting reaction and preparing the way for the more effectual action of other remedies.

Dose.—Five drops every hour or two hours on crumb of stale bread.

Arsenicum may be needed in those advanced stages of redwater, or especially blackwater, in which prostration and debility appear in consequence of the disorder, or of the poisonous nature of its causes. This remedy will greatly help, where indicated by the accompanying symptoms, to remove the bad condition of the system caused by improper food. Diarrhœa, especially if offensive, will still more pointedly indicate Arsenicum. This remedy, remarkable for its efficacy in malignant and putrid disorders, like cattle plague, will be called for in many cases of redwater, which seem to tend towards this pestilence.

Dose.—Ten drops for horses or large cattle, three for sheep, two for dogs, repeated once in three or four hours, according to the severity of the symptoms.

Consult, also, in the Materia Medica, *Bryonia*, *Nux vomica*, *Bella-*

donna, *Pulsatilla*, *Mercurius*, *Lachesis*, and *Sulphur*. Also the remedies set down under the head of "Inflammation of the Kidneys," which in many respects resembles some forms of redwater.

332. Diuresis—Profuse Staling—Diabetes Insipidus—Diabetes Mellitus.—Diuresis or excessive staling of very clear urine produces great prostration of strength, and may, if neglected, end fatally. More often, however, if not relieved, it brings on such a deteriorated state of the system that glanders supervenes and carries off the patient.

The principal symptom, other than excessive staling, is extreme thirst. The horse drinks readily and greedily, and if he be not indulged, will refuse his food. The skin is dry, and the coat is rough and staring. The digestion is generally out of order, and the bowels are torpid. The appetite is capricious, depraved, and impaired. From the prostration induced, the horse sweats easily and is incapable of much exertion, and falls away rapidly in condition.

The causes of this disease are various. Most frequently they are connected with the use of bad forage. Mow-burnt or mouldy hay, and kiln-dried oats, are especially apt to produce it by reason of their diuretic effect on the kidneys. The water in particular localities sometimes also affects these organs. More rarely it occurs as a sequel of any glandular disease, such as strangles, or of any derangement of the organs of digestion.

In some cases it may be traced to the frequent use of "condition balls," a main constituent of which is often nitre or turpentine, which act as stimulants on the kidneys, and by their irritating action cause continual and excessive function of those organs. In sheep, it has been ascribed to eating certain plants, including *Asclœpias vincetoxicum*, *Anemone nemorosa*, and to the young shoots of fir and oak trees. The use of diuretics, such as nitre, may induce it.

Diuresis must not be confounded with that simple augmentation in the amount of urine, which may arise from a multitude of causes, some of an alimentary, and others of a nervous character. Such augmentation, when only temporary, must not be viewed in the light of disease. Change in the food, for instance, often affects the secretion. Thus, if a horse be put on tares, the urine will not only be increased, but it will become whitish and show a great deal of sediment.

Profuse urine, such as has just been described (and which may possibly arise from some previous inflammatory affection of the bladder), is called *diabetes insipidus* (or tasteless), to distinguish it from the much rarer form of *diabetes mellitus*, in which sugar is found in the excessive urine. The former affection, according to Blaine,* is not uncommon in the horse; while the latter, diabetes mellitus, is very rare, but sometimes does occur in the horse.

In cattle it is believed that diabetes mellitus is more common than in horses, according to Gunther, who makes no mention of any other form in these classes of veterinary practice. He says: "In this disease of the urinary organs, the animal passes an incredible quantity of saccharine urine, at first limpid as water, then having a greenish cast; he feels great thirst, but the urine he passes is out of proportion to the water he drinks; gradually he becomes weak, and the discharge of urine is not accomplished without difficulty. At length hectic fever comes on, and the animal is lost inevitably, if art does not interfere in time. The usual causes are cold or moist food covered with frost, or frozen."

333. **Treatment.**—*Acidum phosphoricum:* Profuse urine; milky urine; great debility; excessive discharge of urine of a pale, clear, and thin consistence; much thirst, constant desire to drink; rapid loss of flesh; sweats on the least exertion. This is a principal remedy for diuresis, or profuse staling, especially in the horse.

Dose.—Ten drops every four hours till improvement appears, then night and morning only.

Arsenicum.—Mouth dry; excessive thirst; great emaciation; worn out constitution; *diabetes mellitus*, or saccharine urine. Such a case, in the human subject, has been cured with the long-continued use of this remedy.

Kreosote.—Advised by Gunther for diabetes mellitus in oxen and cows. Copious quantities of clear urine are passed very often; urine of reddish sediment and acrid smell; urine with a bad smell, but no color. This remedy is reported to have cured diabetes mellitus in man, and is remarkably indicated for cases of profuse staling in cattle.

Dose.—Ten drops three times a day.

P. S.—Kreosote so very much resembles *Carbolic acid* in many respects that we cannot but suggest the use of this latter remedy in diuresis.

Lycopodium.—Frequent, copious urination; red sand-like sediment in the urine.

Mercurius.—Great quantities of urine are passed, more at night;

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* "Veterinary Art," p. 390.

turbid urine and fétid; brown-red or dark-red urine; discharge of blood from the bladder.

Sulphur has many of the symptoms of common diabetes, the great emaciation, the constipation, enormous flow, and also that *sweetish taste* of the urine which characterizes the rarer form or diabetes mellitus.

Muriate of uranium, a new remedy, bids fair to assume the first rank in urinary disorders.

Nux vomica.—The following case, treated and reported by Dr. James Moore, illustrates the symptoms and treatment of a common form of this disease, and shows the indications for this remedy:

Symptoms.—A coach-horse; pulse 28 and weak; respiration normal; the whole body is very cold, the legs particularly so; the hair rough, unglossy, and staring; the tongue is of a dirty yellowish color, and some half-masticated food remains in the mouth; the appetite is both impaired and depraved, for the animal manifests a predilection for dirty litter, and refuses to partake of good diet; frequent micturition; urine profuse, clear, and limpid; the bowels are constipated and the fæces are enveloped in mucus.

To have ten drops of *Nux vomica,* 1, thrice daily. On the third day the skin was of the proper temperature and appearance; tongue clean; appetite much improved; fæces and urine natural, both as regards amount and character. On the fourth day, at work, convalescent, and cured.

Pulsatilla.—Recommended for diabetes in sheep. For characteristic indications see the Materia Medica.

In addition to the above-mentioned remedies the following have been recommended for diabetes or profuse staling in the horse: *Conium, Natrum muriaticum,* Baryta muriatica, and Ledum.

For this disorder in sheep consult *Lycopodium* and *Mercurius,* or Mezereum, Acidum phosphoricum, Kreosotum, and Pulsatilla.

Dose.—Where not otherwise stated, the most suitable dose for diabetes (whether insipidus or mellitus) will consist of from four drops to ten drops, according to the size and age of the animal, repeated once in four hours until improvement appears, then night and morning only.

334. Scanty Urine.—In a great number of diseases, the urine is scanty, as a symptom. It is also more or less diminished in hot weather, and when the animal is worked, or much exercised, because then a large quantity of the fluid of the body is carried off by the skin.

It occasionally happens, however, that a horse, for example, suffers from scanty urine and nothing more, attended with some more than usual efforts to relieve himself—a state of things which knowing grooms consider as requiring a "staling ball."

In such a case as this, instead of giving a drug that may set up an awkward amount of irritation, recourse should be had to *Arsenicum* or *Bryonia*, three times a day, until the above symptoms pass off.

Cantharis may be required if there appears much irritation of the urinary passages. See Inflammation of the Bladder and of the Kidneys.

Dose.—Of the selected remedy, five drops to the horse, smaller doses to smaller animals, three times a day.

335. Dysuria—Difficulty of Urinating.—In the horse especially this serious disorder may show itself. If the male animal becomes foul, as may often occur in dry and hot and dusty weather, he must be cleansed. There may be the greatest difficulty in urinating; the animal places himself in position and strains in vain, for upwards of an hour, when at length the urine comes freely, and he is relieved. Dr. J. Moore reports a case of this kind cured by giving *Aconite* 1st dilution in the morning, and *Arsenicum* of the same dilution at night.

Pulsatilla, Conium, Cantharis, Nux vomica, and **Sulphur** may be consulted in the Materia Medica; also see the articles on Spasm of the Bladder, and on Inflammation of the Bladder.

336. Calculi—Stones.—Stones met with in the urinary apparatus are named according to the particular part in which they are lodged.

1. *In the Kidney.*—Stones in one or both kidneys have been found in all animals, the horse and pig in particular. Tenderness of the loins, discharge of blood, and attacks of pain with manifestation of colicky sufferings, are the chief symptoms, but they are not characteristic. Dogs retch and vomit.

2. *In the Ureter.*—Stones sometimes pass from the kidney into the tube leading to the bladder, but this is rare owing to the horizontal position of the ureter. In its passage, most severe pain is excited. If it should be arrested in its course, the urine collects in the kidney and seriously injures that organ. This is specially the case in the pig.

3. *In the Bladder.*—The chief symptoms are: straddling manner of walking, the hind legs separated, frequent efforts to pass urine, stoppage of urine, bloody urine, dribbling, and detection of the stone by passing the hand into the rectum to examine the bladder—into the vagina in female animals; or by using a "sound," when this is feasi-

ble. Vesical calculi occur in the horse, in horned cattle, and in swine.

4. *In the Urethra.*—In male animals, stones frequently lodge in the tube for the passage of urine outwards from the bladder, and, obstructing the flow of urine, set up colicky symptoms. Sheep and rams are especially subject to this.

5. *In the Prepuce, or Foreskin.*—Most common in horses and pigs, and inducing difficulty in urinating.

Symptoms.—The symptoms attending these affections are not only obscure in themselves, but they assume the varied characteristics of the diseases, such as spasmodic colic, inflammation of the kidney, inflammation and spasm of the bladder, sometimes even of redwater. This variety of manifestations is therefore our best guide, and should lead us to pay particular attention to the nature and deposits of the urine, which will be found to consist of a quantity of white, reddish, yellowish, gray, or even very dark, sandy, gritty matter, if, indeed, concretions in the urinary vessels and ducts be present. Having descried the presence of such deposits, we should be led to throw the animal, and to examine the parts more accurately, in order that the irritating substances may be removed. The animal will, sometimes, be remarkably restless and uneasy, alternately stretching and contracting the limbs, or huddling them close to the belly, or standing with the hind legs apart, or striking at the belly with the feet, or continually rolling, and often also with the presence of the tenderness, movements, heat, and fever symptoms, &c., already described under the head of "Inflammation of the Kidney;" sometimes we may remark oozing discharges of matter from the sheath, occasioned by the presence of irritating concretions within the tube, the curvature of which (in the ox) renders it easily susceptible of stoppage.

337. Treatment.—*Aconite:* This remedy may be given in ten-drop doses to the horse and to horned cattle, and in proportionally smaller doses to smaller animals, to relieve the distress, and promote the exit of the stone.

Cantharis may be found useful where there is great straining to urinate, and discharge of bloody urine; and where the region of the bladder is painfully distended.

Dose.—Ten drops in a little water, or on sugar, every two hours till relief appears; then once in three or four hours.

Nux vomica, Sarsaparilla, and **Uva ursi,** have also been recommended. (See Materia Medica.)

Lycopodium.—This important remedy should not be forgotten in such cases; it will be indicated by much reddish sediment in the urine; and either with or without the co-operation of Sarsaparilla, it may greatly aid in curing the constitutional condition which leads to the formation of the calculi.

When the stones have acquired size, and can be plainly detected upon examination, as above directed, they may be removed by an operation. It sometimes occurs in the female (mare) that the calculus passes into the urethra of its own accord, as if seeking to escape. This desirable result may be promoted by mechanically dilating the urethra; but in the male there is less opportunity for such a course; nor can it succeed in any case unless the stone is of moderate size.

CHAPTER X.

DISEASES AFFECTING THE ORGANS OF GENERATION.

SECTION I.

338. Abortion, Slinking.—Abortion, commonly known by the name of slinking, is very prevalent amongst cows, occurring, variously, at different periods of pregnancy, between the fifth and ninth months. Mares are less subject to abortion, except, indeed, during the sixth month. Abortion is so communicative by sympathy amongst animals, particularly mares and cows, that it assumes the aspect of an infectious disorder. Amongst cows it bears the double character of endemic and epidemic disease. With sows abortion rarely occurs, but it is somewhat sympathetic; the young are almost invariably dead, and sometimes already putrid when delivered. Amongst sheep (ewes) it is not so easily and readily communicated, nor is it of such common occurrence. Towards the close of the period of gestation, however, it not unfrequently occurs, but generally, as occasioned by errors of feeding, scantiness of food, constitutional disease, unhealthy situations for folding, want of proper precaution in general treatment, and by the worrying of the sheep-dog. With ewes abortion is rarely fatal to the dam, but ever so to the lamb. With cows it is very frequently fatal to both (the calf being usually expelled in an advanced state of decomposition), and with mares occasionally so. With ewes there are indeed few instances in which the young are born alive (prematurely), but they are usually delivered very shortly after death.

General Causes of Slinking or Abortion.—In respect of ewes, to the causes already stated may be added, exposure in bleak situations; continued intercourse with the male—where the ewe and ram have been left within reach, or careless driving of the sheep. As regards the mare, the general causes of abortion may be stated as overexertion, with strain or lesion; want of sufficient exercise; confinement in foul and unhealthy places; excessively stimulating or poor and insufficient food; and sympathy. As regards cows, it prevails in particular districts, where it arises from atmospheric influences, or from the peculiar nature of the pasture; it is contagiously, or rather sympathetically, conveyed from one cow to another, and from generation to generation, becoming an hereditary disease; sometimes it occurs from inaptitude of construction of the male for the female. Inflammatory and highly stimulating food, as also impoverished feeding, undue exposure, too high condition, lesion, errors in general treatment, occasion the prevalence of abortion amongst cows. As regards the sow we may enumerate copulation during pregnancy; the violence of the friction, which, to pigs, is a constant luxury, may sometimes occasion it; but the more common causes, other than lesion and the like, are errors in the food, inadequate proportion of good food, &c., and an excess of green watery food.

Professor Tanner* attributes to the growth and consumption of ergotized grass seeds very much of the prevalence of abortion among cows in Great Britain. He says: "The action of ergot of rye (*Secale cornutum*) upon the womb is well known as an excitant to powerful action, which usually terminates in the expulsion of the fœtus. We have a similar disease appearing on the seeds of our grasses, but especially on the rye-grass, and thus we have an ergot of the seed of rye-grass produced, possessing similar exciting powers upon the womb to those produced by the ergot of rye. Two conditions are necessary for the production of this ergot upon the seed of rye-grass. The first is, the grass must be allowed to run to seed; and the second is, the climate must be favorable for encouraging the development of the ergot. In practice, we find that on land which has been fed on during the summer, unless it has been grassed with unusual care, much of the grass throws up seedstalks and produces seed. In districts where the climate is humid and rain abundant, as well as in very wet seasons, these seeds become liable to the growth of this ergot. Cattle appear to eat it with a relish, and the result is, that abortion spreads rapidly through the herd. Heifers and cows, which, up to the appearance of the ergot, have held in calf, are excited by consuming it in their food to cast their calves. The abortion having once commenced, we know that the peculiarly sensitive condition of the breeding animal will cause its extension, even where the original cause may not be in operation, but their combined action renders the loss far more serious. If we add to this the tendency which an animal receives from her first abortion to repeat it when next in calf, we see how seriously the mischief becomes multiplied.

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* "Dairy Stock," p. 229.

"A somewhat extended observation, added to my own experience, has led me to the conviction that very much of the loss arising from abortion in our cows may be traced to the cause I have named. I feel assured the influence is even more extended than I have stated; for not only would the fœtus be thrown off in an advanced stage, but also during its earlier growth, thus causing great trouble to breeders of high-bred stock—the repeated turning of cows to the bull, and at most *irregular* intervals. The remedy differs in no respect from the ordinary mode of treatment, except that it compels a removal of the stock from the influence of the cause. Much, however, may be done by way of prevention, and this I shall briefly notice. It simply consists in keeping breeding cows and heifers upon land free from these seeds. Grass which has been grazed during the summer, will very generally (in a humid climate), have some of this ergotized seed; but I have not observed any produced before the end of July, or early in August; and I doubt its existence to any injurious degree up to this time; we may, therefore, consider such ground safe up to this period. If the breeding stock are then removed to grass land which having been mown for this operation is a guarantee against any seeds remaining, it will seldom if ever happen that any injury will result from the production of ergotized grass later in the season. I will not venture to say that such will not appear in some cases where the grass has been cut early, and has been followed by a rapid growth; but, at any rate, we have grazing land free from this excitant from July until September; and in the grass which has been mown *late*, I do not consider there is the least fear of ergot being again formed in that season. In this manner a farmer may keep grass land for his breeding stock entirely free from ergotized grass, and, consequently, so far as this cause is considered, they will be free from abortion. It is also worthy of attention, how far young heifers may not be prejudicially influenced, before they are used for breeding, by an excitement of the womb. This appears to me a subject worthy of some interest on the part of the veterinary profession."

This noxious growth of grass seeds may not yet have been observed in this country, although it is common enough in the cultivated grains, *Secale cornutum* in rye and "smut" in wheat, and the *Ustilago madis* on the ears of maize. But it has been deemed proper to invite attention to this subject; so that if it should at any time prove operative in producing abortion in America, as it already has in England, it will be at once detected and guarded against.

The following symptoms will indicate an approaching abortion: Sudden loss of the natural vivacity, rapid diminution of the milk, loss of appetite, absence of rumination, enlargement and drooping of the belly, and hollowness of the flanks; tottering gait; gradual lessening of the jerking movements of the fœtus; continued recumbency, with disinclination to move, or continually erect position without movement of any kind; the respiration more and more impeded; sometimes the breathing is more or less convulsively interrupted; a yellowish or red shining matter is discharged from the bearing; continual bleatings or moans, with occasionally more or less restlessness and shivering.

Should death have taken place it may be necessary to extract the foal, calf, &c., without waiting for the natural powers to do so; and, if necessary, the process of delivery may have to be aided by the hand of the veterinarian; or failing this by suitable instruments.

339. Treatment.—*Arnica:* Threatened abortion from blows, or other external mechanical injuries.

Dose.—Ten drops every hour, or two hours. The external application of *Arnica tincture* diluted with ten parts of water (which should be warmed in cold weather), will be equally necessary when the external injuries have been considerable. See section on "Mechanical Injuries."

Rhus tox. should be given internally in the same manner as advised for Arnica, only but half as often, when the tendency to abortion results from a strain, as in drawing heavy loads, or otherwise.

Opium must be given in the same manner as directed for Arnica, where the danger of abortion results from a fright. And perfect quiet and rest should be maintained in this instance, as indeed in all others.

Pulsatilla, ten drops thoroughly mixed in one pint of water, and two tablespoonfuls given every hour, will sometimes prevent the abortion, by removing the uterine pains. But where the abortion is inevitable it promotes and hastens this conclusion; and proves very efficacious in causing the after-birth to come away in a proper manner ("cleansing"). For the latter purpose, as well as for promoting delivery, it should be given in much larger (six-drop doses) quantities, than when it is used to prevent miscarriage.

Secale cornutum may be required when the abortion has actually occurred, for the violent straining (after-pains), profuse flow of blood, debility, feebleness of pulse.

Dose.—Five drops every hour, or two hours till better.

Sabina.—This important remedy may be indicated, either before, or during the abortion, by discharge of bright-colored blood, or of masses of coagulated blood, with strong straining efforts.

Dose.—Six drops every two hours, given, like the others, in a little water, which may readily be placed on the tongue.

China may be required to enable the animal to recover from the debility caused by too profuse flow of blood during or after the abortion; it may even assist in stopping such a flow.

Dose.—Six drops once in three or four hours.

Preventive and General Treatment of Abortion.—Have a care to ascertain and obviate the immediate cause, if there be any, and pay continual attention to the nature of the food, folding, pasture, housing, litter, cleanliness, ventilation, exercise, and general treatment; and consult the Materia Medica, for the purpose of selecting judiciously from amongst the following remedies: *Aconitum*, *Belladonna*, *Bryonia*, *Cannabis*, *Chamomilla*, *Cina*, *Cocculus*, *Hyoscyamus*, *Nux vom.*, *Platina*, and *Sepia*, when abortion is imminent; and *Sulphur* (or such other remedy as is indicated by the prevailing morbid manifestations) in cases where there is constitutional predisposition in particular animals, owing to bad habit of body. *Tincture of Camphor* has been successfully used as a preventive remedy, in cases in which there was morbid susceptibility of sexual instinct, and in which spasmodic action of the womb (in default of other apparent causes, and in the absence of distinct disease) appeared to be the direct cause of unproductive copulation or premature delivery. *Sepia* is no doubt one of the most efficient remedies to prevent abortion, by curing some remote noxious element in the system, which powerfully predisposes to this result. But it is not probably worth while for any one to engage in the doubtful business of breeding from animals (cows especially), who are known to be "slinkers," *i. e.*, to throw their young prematurely. Still if any one wishes to make the attempt, five drops of the dilution might be given night and morning, for a week, then omit one week, &c., &c.

340. Difficult Parturition and its Consequences.—The natural course of delivery requires no medicinal interference; it is only when the labor is difficult and unduly protracted that we are called upon to intercede. Particulars relating to the due course of parturition have already been enumerated under the head of each animal, respectively, in the first part of this work, to which the reader is therefore referred. It must not, however, be omitted, that, during the latter period of pregnancy, and towards the approach of parturition, every animal should be the object of constant vigilance, and that any irregularities attending the excrements, milk, skin, pulse, movements, &c., &c., should be obviated by prompt and appropriate treatment, according to the character of the symptoms.

Upon the earliest manifestation of symptoms of approaching parturition, the person to whom the care of the animal is intrusted should be on the alert, and should watch the progress of delivery, for the purpose of yielding such mechanical or medicinal assistance as may be required.

Symptoms of Approaching Parturition.—Increasing uneasiness and agitation; constant change of position; quick breathing; swelling of the udder, with sudden gush of milk; drooping of the belly, and external swelling of the bearing and adjacent parts; shining, glossy red, or yellowish discharge from the bearing; as regards the sow, inordinate distension of the belly and sinking of the back; painful, moaning grunt; gathering of straw in the mouth; sudden enlargement of the teats.

The slowness in the development of the labor-pains; the undue continuance of the pains and throes without delivery; the subsidence of the throes; the inordinate and convulsive violence of the throes; the continuance of the throes after the expulsion of the after-birth; excessive discharge of blood; and other irregularities in delivery, will call for medicinal interference.

Mares, unless they have been overworked, or overdriven, seldom have any trouble in foaling. But for various reasons, such periods are more dangerous for cows. We give from Gunther principally a few brief hints as to the use of the medicines most efficacious in these circumstances, and they are the same that are most used in human obstetrics.

341. Treatment.—*Pulsatilla:* When the pains are too light, or die away by spells. This one remedy in doses of ten drops, given at intervals of two or three hours, will often prove all that is needed to facilitate delivery in mares or cows.

Secale cornutum.—The pains are accompanied with convulsive movements in horses; and excessive straining in cows.

Chamomilla.—Great restlessness; distress before the effectual pains come on; a long time elapses before the animal lies down. This remedy is suited to difficult or delayed parturition with excessive painfulness. *Pulsatilla* may be given in alternation with it to promote the working pains.

Opium, and also **Pulsatilla,** may be needed when the pains cease altogether. Opium may restore the temporarily lost tone of the system, and thus enable *Pulsatilla* to do much more good than if it had not thus been preceded.

Aconite and **Chamomilla,** either separately or in alternation, are useful in promoting the flow of the milk.

Arnica.—Internally, and externally as a lotion (one part of the tincture to nine parts of water), will exert a beneficial influence when, from the severity and long continuance of the pains, the parts may have been bruised; especially suitable, for this same reason, after operations, whether manual or instrumental. This remedy may also be needed for actual inflammation of the womb, after parturition.

Sabina is advised to be employed in alternation with Arnica, in order to remove inflammation of the womb.

Sepia and **Platina** are recommended for long-continuing intense pains after the after-birth (placenta) has come away.

Dose.—These remedies may be given in ten-drop doses, introduced in the most convenient manner, and repeated once in one, two, or three hours, as long as needed.

Consult in the Materia Medica portion of this work, *Aconite, Belladonna, Bryonia,* and *Nux vomica.* See also the previous article on Milk or Puerperal Fever, or Dropping after Calving, in Cows, Chapter VII, p. 357, of this work.

342. Removal of the After-birth.—The dislodgment and expulsion of the after-birth should follow immediately after delivery, and, if this does not take place, no time should be lost in resorting to appropriate treatment, lest fever, degenerating into a typhoid character or putridity, supervene. After a brief season of rest from the severe exertion inseparable from the expulsion of the young animal, the pains usually return with sufficient force to accomplish this result; if not, the following medicines will be found useful, as indicated.

Belladonna will be required if there is much redness of the parts, or any appearance of inflammation.

Pulsatilla.—Pains too feeble; intermittent.

Secale cornutum.—Entire absence of pains; and where Pulsatilla proves insufficient.

Dose.—Give of the selected remedy, five drops every hour.

343. Discharge of Blood from the Womb after Delivery.—For this complication see previous article on abortion; and consult in the Materia Medica, especially, *Ipecacuanha*, *Belladonna*, *Arnica*, *Sabina*, *Chamomilla*, *Platina*, and *Sepia*.

Dose.—Give five drops of the selected remedy, every hour, or two hours, according to the severity of the flow, till it begins to subside; then a dose one in three hours, till three doses are taken.

344. Inversion of the Womb.—Inversion of the womb, that is, the ejection of the matrix itself immediately after the expulsion of the fœtus, is occasioned by the inordinate violence and convulsive nature of the throes, arising out of difficulty in the delivery, and by violence used in extracting the young animal, or in the removal of the after-birth. The bag itself, sometimes of a vivid red color, sometimes purplish, protrudes and hangs from the bearing.

Treatment.—After having gently replaced it, and temporarily bound the parts, give *Arnica* in five-drop doses, once in three hours, keeping the animal as quiet as possible; and feeding her for two or three days on light but nourishing food.

345. Other Injuries Occasioned in Labor.—Either from the violence of the natural effort used in expelling the fœtus, or from the roughness or inevitable severity of the mechanical measures adopted to obviate a misplaced, or otherwise irregular presentation, it not unfrequently occurs that the bearing and adjacent parts are externally lacerated, in which case it will be desirable to apply a proper dressing to the parts, to prevent the occurrence of more severe results. These lacerations rarely involve the necessity for constitutional treatment other than that which is adopted to facilitate delivery or to subdue internal inflammatory action in and after difficult labor.

Treatment.—To one pint of water add a dessertspoonful of *Tincture of Arnica*, and bathe the parts frequently and freely, until the soreness is removed; or if there be much bleeding, and the rent be deep, especially if the parts are much swollen, with vivid inflammatory redness, we should prefer the *Tincture of Calendula*, which may be applied in similar proportions. For constitutional treatment see "Difficult Parturition."

346. Inflammation of the Womb (particularly of Ewes).—Inflammation of the womb, to which ewes which have been kept in too high condition during pregnancy are particularly liable, may occur either four or five weeks before parturition, or within three or four days after lambing.

In respect of this disease, as occurring before delivery, the symptoms are so obscure, and the disease is so treacherous, that it were difficult to indicate any distinct traces or apt treatment of it. It is not uncommon to distinguish the first intimation of its previous existence, in the lamb after death, as indicated by the presence of an inordinate quantity of watery fluid in the intestines. In these cases, the lamb never partakes of food, and dies within sixty or seventy hours after delivery.

Inflammation of the Womb before Delivery may sometimes, however, be traced in the usual symptoms of inflammatory fever, together with discharges of blood and excessive tenderness of the flanks; and, if not at once arrested, it will generally degenerate into acute dropsy, when the carcass will develop a general and inordinate swelling and puffiness, the skin often emitting a crackling sound (as in rot) upon pressure, especially about the flanks.

Treatment.—If the development of the disease be distinguished during the inflammatory stage, consult the article on Specific Effects, for the purpose of selecting judiciously from amongst the following remedies: *Aconitum, Belladonna, Bryonia, Cantharides, Chamomilla, Lachesis, Mercurius, Nux vomica, Platina, Pulsatilla,* and *Secale.* If the dropsical swelling should be the first intimation of the presence of this disease, in like manner select from amongst the following remedies: *Arsenicum, Digitalis, Dulcamara, Helleborus nig., Ledum palustre, Mercurius, Pulsatilla, Sabina, Sepia,* and *Sulphur.*

Doses.—During the inflammatory stage, three doses, at intervals of two hours, and afterwards doses repeated at intervals of from six to twelve hours, until the symptoms subside. During the secondary stage, the first three doses at intervals of six hours, and afterwards at intervals of twelve hours, till the symptoms subside.

Inflammation of the Womb succeeding Parturition should receive immediate attention. There are few diseases which are more severe or more fatal, or whose course leads so immediately to an issue.

The muzzle is dry and hot; the root of the horn, or the scalp between the ears, intensely hot; the ears and extremities are icy cold; the urine and evacuations are suppressed; food is avoided; rumination scarce; the animal keeps quite apart from its companions; the flanks heave; the quarters totter and quail when the animal attempts to stand; the hind legs sink under it; sometimes there is a discharge of hot, red blood instead of urine; and the eyes are inflamed, the pupils contracted, and the look downcast, or fixed and staring.

When manual or instrumental interference may have given rise to inflammation of the womb after delivery, *Arnica* should be employed, prepared as a lotion, as advised under the title of "Injuries occasioned in Labor," but used as an injection into the vagina, once in two hours, taking care that the temperature of the injected fluid be about blood heat.

The principal cause, so far as is known, of this very dangerous affection, consists in the retention of (some portion of) the after-birth, whose rapid putrefaction gives rise to an acute inflammation, that quickly induces a typhous condition of the whole system. Coagulated blood, or other discharges, lodged within the uterus or vagina, may have a similar effect.

When there is reason to suspect that some remaining discharge in the uterus or vagina, or some fragmentary portion of the after-birth, causes the fever by its decomposition, the parts should be thoroughly cleansed by injections of *Carbolic acid*. This injection should be made, for this purpose, by dissolving ten grains, or drops, of Carbolic acid in one quart of soft, warm water. Dr. Moore recommends the use of "Condy's Fluid"—solution of permanganate of potassa—for the same purpose. For the medicinal treatment, consult the Materia Medica, and select from amongst the following remedies: *Aconitum, Belladonna, Cantharides, Crocus, Hyoscyamus, Lachesis, Mercurius, Nux vomica, Platina, Pulsatilla*, and *Secale*.

Doses.—The first three doses should be given at intervals of fifteen, thirty, and sixty minutes; after that, the treatment should be continued with doses every two, four, or six hours, according to the degree of amelioration or severity of symptoms, from five to ten drops.

347. Puerperal Fever—Milk Fever—"Dropping after Calving."—This form of disease has already been considered in the chapter on "Fevers," at No. 284, which see.

348. Puerperal Paroxysms (particularly of the Bitch).—These peculiar paroxysms are indirectly occasioned by the excessive draining consequent upon suckling a large litter, and sometimes by the insufficiency or inferior quality of the food during the early period after parturition. The earliest premonitory symptoms should be met by appropriate treatment, for when the paroxysm supervenes, there is but little chance of effectual treatment.

Symptoms.—At first, we may observe the bitch reeling, with every attempt to move; the hind quarters quailing, and often sinking, and the animal abstaining from paying any regard to her young. When the paroxysm has fairly come on the bitch will lie upon her flank, breathe with fearful and audible effort, and the flank will be characterized by rapid and violent panting; the limbs become affected with spasmodic twitchings, and contraction or contortion; convulsive movements of the limbs supervene; the muscles of the throat, chest, and stomach generally are similarly convulsed; the muzzle becomes retracted; the teeth close set, and grinding; the eyes closed or fixed, glaring, wide open, and distorted.

Belladonna and **Hyoscyamus** are the principal remedies. When apprehension exists of such a difficulty, give *Belladonna* in two-drop doses every hour to calm the excitement and prevent the development of the paroxysms. Should the convulsions set in, this medicine may be continued every fifteen or thirty minutes, till relief appears. But if no relief comes after giving a number of doses, *Hyoscyamus* may be used in a similar manner. The characteristic symptoms, as laid down in the section on "Materia Medica," should determine the choice of the remedy in the first instance.

Chamomilla may be studied, and has been recommended in such cases.

349. Garget.—A disease to which cows and ewes are exceedingly subject, and which requires great care and attention. It consists of a species of inflammation and induration of the lacteal glands, and of the interior of the udder and teats.

Symptoms.—The first indication of the presence of this disease consists in the refusal of the dam to suffer the young to suck; and this is ever to be looked upon as a distinct symptom of derangement, because, besides the natural affection of the dam for its young, which prompts it to nurse its offspring, the painful distension occasioned by the rapid secretion of milk would, in the ordinary course, lead the dam to suckle the young for relief; upon examination, therefore, which should take place as soon as the above-mentioned indication occurs, we shall generally find the udder exceedingly tender, of a burning heat, swollen, and knotty; the development of distinct hard lumps takes place in various parts of the udder, and the teats become likewise affected with these tumors or nodosities; in the earlier stage, the development of tumors, which is gradual and progressive, will not have taken place, and the general hardness, heat, tenderness, and swelling of the udder, &c., will constitute the group of symptoms; later, considerable constitutional disturbance supervenes, and the pulse and respiration are powerfully affected; the swellings or lumps in the udder become flabby and soft, owing to the progress of suppuration; sometimes proceeding to the development of large ragged ulcers, or even to the formation of permanent, hard, knotty tumors, with decrease and impeded discharge of milk; the milk is tinged with blood, and mingled with matter; the appetite fails, and rumination ceases.

Causes.—Excess of condition, especially at the first parturition; neglect during the latter period of pregnancy; careless and imperfect milking, or cessation of milking for too long a period; the milk not being drained thoroughly off, so as to leave the more dense and coagulable portion of it in the udder, whereas it is coagulation of the milk which is the immediate cause of garget; exposure in cold, bleak, damp, and marshy situations; and sometimes, also, the peculiar habit of the animal of exposing the udder to pressure when lying down, are also amongst the provoking causes; as, also, neglect in the treatment of the animal immediately after parturition (suffering inflammatory action to continue without due attention), or the effect of cold and moisture at that time.

350. Treatment.—*Phytolacca:* Many homœopathic remedies have been advised for this disease; but they all are inferior to one which has long been known as a domestic remedy for cows affected with garget. And it is from the excellent effects of *poke*, or *scoke*, or "garget," as it is called in the eastern sections of the country, on cows, that it has come to be recognized as invaluable in similar disorders in the human subject. When a boy, I remember seeing my father slice up the green root of this plant, insert the slices in some pieces of raw potato, and give them to a cow whose "bag" was swollen and hard, and that she was thus cured. A similar experience is quoted by Dr. E. M. Hale:* "When I was a student of medicine in my father's office, a neighbor had a valuable cow, which, after a clandestine confinement, was brought home from the woods with a most enormously swollen udder. It was hard as a stone, intensely hot, painful, and sensitive, and not a particle of milk could be drawn. A dose of Epsom salts was administered, but after twenty-four hours the cow was worse than before. At this juncture an old woman of the neighborhood brought in a piece of a large, white, succulent-looking root, which she called *scoke*, and ordered the farmer to cut a portion of it up finely and give the animal in some bran mash. Another, the larger portion, was made into a decoction, and the cow's udder washed with it frequently. The effect was magical! In less than twelve hours the milk could be drawn, the gland softened, and in a few days the morbid condition was removed."

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* "New Remedies," second edition, p. 795.

This is a most remarkable homœopathic remedy, for it is capable of causing what it thus cures. The *Poke-weed*, or *Phytolacca decandra*, known by its rows (racemes) of purple berries, grows in most parts of the United States, and constitutes one of the principal of the famous Indian medicines.

Dose.—Those who cannot readily procure the fresh root may use the mother tincture in five-drop doses in a little meal once in three hours, and bathe the udder as often with a lotion made by mixing one teaspoonful of the tincture in one pint of soft warm water.

The Phytolacca is no less suitable for mares than for cows.

Should the disorder already have advanced to suppuration, and this not readily yield to the Phytolacca, consult the article in Materia Medica, and select *Silicea*, *Phosphorus*, or *Sulphur*, according to the prevailing symptoms, and give three drops of the chosen remedy night and morning.

351. Soreness of Teats.—The soreness, cracking, excoriation of the teats, or even discharge of matter from the fissures developed about the teats, resulting from a considerable degree of irritation or inflammation, is of very common occurrence amongst cows, and when the cow betrays great pain, and is restive during the milking, without the evidence of constitutional disturbance, the appetite and rumination being unaltered, it is very desirable that the teats should be examined and appropriately treated, otherwise constrained suppression of milk may ensue, and entail more serious consequences. The habit of impatiently goading the cow, which is restive during milking, under such circumstances, is exceedingly reprehensible, and is not unfrequently followed by decreased or deteriorated supply; sometimes by the admixture of blood with the milk, or even by the occurrence of severe constitutional disturbance. If, indeed, the excoriation be neglected, it will often result in garget, arising out of the suppression and consequent coagulation of the milk; or if it does not lead to such serious consequences, the yield of the milk will become permanently diminished, or a vicious habit of restlessness incurred, which will render milking a serious task.

Treatment (*externally*).—Upon the first appearance of restiveness, during milking, the teats should be examined, and if found fissured, sore, or excoriated, the parts should be gently bathed with tepid water, and an unmedicated cerate, or slightly arnicated cerate should be applied, consisting of pure beeswax dissolved in water, with the addition of an equal volume of the finest pale olive oil, to which the tincture of Arnica may be added, in the following relative proportions: Beeswax, two ounces; olive oil, two ounces; tincture of Arnica, thirty drops. Or when there is not much swelling, or redness, the application of arnicated lotion may be resorted to, as follows:

The Lotion.—To one pint of water add a dessertspoonful of tincture of Arnica, and bathe the parts with this lotion half an hour after milking (twice a day).

Constitutional Treatment.—Consult the article on "Materia Medica," for the purpose of selecting appropriately from amongst the following remedies: *Arnica*, *Chamomilla*, *Calcarea carbonica*, *Causticum*, *Graphites*, *Ignatia*, *Lycopodium*, *Mercurius*, *Nux vomica*, *Pulsatilla*, *Sepia*, and *Silicea*.

Dose.—Three drops of the selected remedy night and morning.

352. Castration and Spaying.—These are operations which, however unnatural and inhuman, serve materially to enhance the usefulness and profitableness of domestic animals. The animal reserved for the purposes of draught or carriage is rendered tractable by the abduction of organs which increase the mettle of every animal to the degree of ferocity at times. For animals reserved for fattening, these operations are unfortunately indispensable, the continual excitement of sexual instinct preventing the deposit of flesh and fat. Castration, it is well known, is the removal of the immediate organ of generation from the male, and spaying applies to the extraction of the ovaries of females.

353. Castration of Colts should take place at various ages, according to the condition and development of the animal, and according to the particular purpose to which it is devoted. The majority of colts, intended for farm purposes, may be castrated about the completion of the fifth month. But with draught horses, which are but imperfectly developed, castration may, in many cases, be deferred until the ninth, tenth, or twelfth month. The operation is more safely performed in cool weather, but not during the prevalence of cold winds, unless the colt be warmly housed; and but rarely, even with these precautions. Still less, should hot, sultry or scorching weather in the height of summer be selected for castrating colts. Colts should, as a general rule, be castrated before they are weaned, and they will in such cases require little or no constitutional treatment. If, however, for imperative reasons, the operation be deferred until after weaning, we should take such precautions as may abate inflammatory action. The operation is variously performed, but the new method of the ligature (by binding a string tightly round the scrotum, so as to separate the testes from the belly), which is also known by the name of twitching—until the scrotum itself, nd the contents, perish and fall—cannot be considered as safe,—whereas, it is far more inhuman than the simple method of effecting an incision each side of the scrotum, and thus severing the parts with the knife. nother method is to separate the lower part of the scrotum and its ontents from the belly, by means of severe compression between two all blocks, under which circumstances, as with recourse to the ligaure, the parts perish and fall spontaneously. This method has no merit which is not possessed by that of twitching, and is equally severe and brutal.

Constitutional Treatment before and after Castration.—Consult the article on Materia Medica, for the purpose of selecting appropriately from the following remedies: *Aconitum, Arnica, Pulsatilla,* and *Sulphur;* or, especially before castration, *Nux Vomica, Arnica, Pulsatilla,* and *Sulphur.*

Doses.—The administration should continue morning and evening, until the symptoms are subdued.

External Treatment immediately after Castration.—If the hemorrhage (from the incision) be very considerable, we should have recourse to the *Tincture of Calendula,* in the following manner:

Application.—To one pint of water, add two tablespoonfuls of *Tincture of Calendula,* and bathe the part freely, at first every half hour, and afterwards (as soon as the hemorrhage subsides) three times a day, until the parts are thoroughly healed.

If there be laceration and swelling, without much discharge of blood, we should prefer the use of Tincture of Arnica, in the following manner:

Application.—To one pint of water add a teaspoonful of the Tincture of Arnica. . Mix thoroughly, and bathe the parts with this lotion three times a day until the symptoms subside.

354. Castration of Calves.—The period at which the castration of calves may most advantageously be effected, varies according to development, strength, time of year, and weather, from about six weeks or two months to five months old. The original method of resorting to the ligature of the scrotum has been superseded, and justly so, by the more simple, less inhuman, and less painful method of effecting a sufficient orifice athwart the side, on the lower part of the bag, merely holding the bag firmly in the hand, and as soon as the testes protrude, nipping the spermatic artery and cord with the forceps, so that these connecting ligaments and vessels may be twisted off by the revolution of the instrument. The habit of wrenching away the testes by sheer force, as soon as they protrude from the incision of the scrotum, which is common to clumsy operators, is as brutal as it may prove serious in its consequences. In the absence of the forceps, the simpler and more secure method is to apply a ligature to the vessels only, to prevent unnecessary loss of blood, and then to sever the vessels and the cord also with the knife, so as to avoid all severe laceration. In no case is the castration of calves attended with much hemorrhage, unless it be very clumsily performed, and the animals rarely require further treatment than the ordinary precautions against undue irritation. When, however, the necessity for appropriate and special treatment occurs, the treatment prescribed in respect of colts applies equally to calves.

355. Castration of Tup-Lambs.—Tup-lambs should not be castrated later than the expiration of the first month after birth, and if very weakly, not much sooner; but in some cases castration may be very safely effected as early as the expiration of the first week. The operation may be performed, or deferred, according to the state of the temperature, or the particular state of the lambs. The fatal consequences which sometimes ensue from want of sufficient attention to these particulars, sometimes involve the majority, if not the whole of a fold of lambs. Lockjaw, or other convulsive nervous affections, appear to prevail. Atmospheric influence may be considered as the more frequent cause of this fatality, and, therefore, the temperate condition of the atmosphere, with a degree of moisture, but without the prevalence of cold winds or rain, or sultry and excessive heat, are matters of paramount importance at the period of castration. There are several methods of effecting the operation.—(1.) That of squeezing the testes upwards into the belly, and cutting off a portion of the lower extremity of the bag, and then allowing the testes to sink again, and to protrude through the orifice, when they are detached, sometimes by wrenching, sometimes by cutting, and even by biting the cord asunder. The laceration produced by wringing the cord asunder, or by means of a blunted instrument, is not generally injurious to the lamb, and seems to arrest hemorrhage. (2.) Another method, preferable in the castration of lambs of more advanced age, is to hold the bag firmly between its contents and the belly, and to force or squeeze the contents downward, producing tension of the lower portion of the scrotum, along the fissure of which, between the two glands, a long incision is then made, through which the testes protrude, and whence they are separated as above described. (3.) Another method consists in separating the testes from the belly by a tightened ligature, when they are either suffered to perish and fall off by total stagnation of circulation, or may be detached with the knife, as soon as they cease to possess any share of vitality.

Constitutional Treatment Attendant upon Castration.—Tincture of Camphor is often of great service in the convulsive affections resulting from castration.

Method of Administration.—Saturate a small piece of the crumb of stale bread, or a ball of meal, with three drops of the Tincture of Camphor, and place the saturated medium upon the tongue, as near the orifice of the throat as possible. Repeat this operation every fifteen minutes, until the muscles become relaxed. If actual lockjaw should have supervened, the Tincture of Camphor may be so applied to the nostrils that the animal cannot avoid the inspiration of a portion of the vapors emanating from it. Or, again, the muzzle may be rubbed with a diluted solution, consisting of one part of the concentrated tincture to ten parts of alcohol.

Consult also the article on Materia Medica, and select from: Belladonna, Cuprum a., Hyoscyamus, and Veratrum.

Doses.—The administration should be repeated, if possible, at intervals varying from five to sixty minutes, according to the severity of the case, until the muscles become relaxed, and then at intervals of from two to six hours, until the symptoms subside.

There has been a practice, in some countries, of spaying animals, such as the cow or ewe, within a few weeks after parturition, in order to secure the continual secretion of milk; and this may, indeed, become advantageous to those who wish to rear winter lambs; for if the animal be spayed when the milk is most abundant, it will continue to yield as plenteously throughout the year; and when the natural dam becomes deficient of milk, or from other causes is unable to suckle the lamb, the spayed ewe will always be at hand to act as a nurse or foster mother.

356. Spaying of the Ewe-lambs.—An operation which requires considerable experience to be well performed. The operator should, if possible, have two assistants,—the one to hold the fore legs and shoulders firmly, whilst the second keeps the right hind leg firmly down, and stretches the left leg upwards, holding that also very firmly. It is in this position that the lamb is held down upon its right flank, upon a table or dresser, conveniently elevated for that purpose. An incision is then made in an oblique direction, in a direct line, and at approximately equal distances between the navel and the upper extremity of the loin. The outer skin being perforated, the operator proceeds to perforate the muscular coating, and then the membrane which encompasses the intestines. The left ovary will then be within reach, and may be extracted by the curved insertion of the forefinger, when the second ovary and uterus will also protrude; the ovaries are then wrung or cut away, and the womb, with its integuments, &c., is carefully replaced. Constitutional disturbance rarely follows this operation; but we have occasional instances of inflammation of the coating of the stomach supervening, when appropriate treatment will be requisite. Occasionally, also, there may be somewhat profuse hemorrhage, so much indeed as to require apposite applications.

Constitutional Treatment of Inflammatory Affections, occasioned by Spaying.—Consult the article on Materia Medica, for the purpose of selecting appropriately from amongst the following remedies: Aconitum, Belladonna, Bryonia, Chamomilla, Hyoscyamus, Nux vomica, and Rhus.

Doses.—The administration will require to be repeated at intervals of two hours, and afterwards at intervals of from four to six hours, until the symptoms subside.

External Treatment of Hemorrhage, &c., occasioned by Spaying.—*Application:* To one pint of water add two tablespoonfuls of Calendula Tincture, and bathe the parts freely with the lotion, until the hemorrhage ceases, and three times a day afterwards, until the parts are healed.

357. The Castration and Spaying of Pigs differs but very slightly from the method adopted in respect of sheep, except, indeed, that it is done with less imperative precautions. The ordinary method of castrating a boar-pig is to open the scrotum along the fissure, to squeeze out the testes, and then simply to sever the cord, either by means of a knife or blunt instrument, or with the teeth; or, as with lambs, when more advanced in age, by attaching the ligature to the scrotum, and thus separating the glands from the belly. The laceration of the cord, as with regard to the lamb, is rather beneficial than otherwise. With regard to the spaying of sow-pigs, the method already indicated respecting ewe-lambs is that generally applied. The castration of the boar-pig may be effected almost at any time under the third month, and after the tenth day, but requires a little more precaution as the pig is more matured. The general rules for treatment—in the rare instances in which after-effects of a serious character ensue—apply equally to the sow and boar-pig as to the ewe and tup-lamb.

358. Increase of Sexual Instinct.—Appearing at the regular seasons, heat is rather a desirable manifestation than one which requires checking; but it often occurs also as a morbid symptom, and almost invariably with phthisicky disorders, when it is prolonged, continual, and insatiable; and as such it requires to be treated consistently with the nature of the disease of which it is a dependent complication. Unspayed female animals, retained for purposes of labor of any kind, and not intended for breeding (or uncastrated males, from which it is not intended to breed), however, will naturally be found in heat at the first commencement of the spring. The characteristic swelling of the bearing in season, together with the peculiar neigh, bleat or lowing of the animal, will afford sufficient indications of heat. Sows, dogs, cats, &c., are apt to stray away when in heat; and the peculiar cry of some of these animals is well known. If for purposes of use we wish to check the heat, it will be necessary to submit the animal to a course of constitutional treatment, and, at the same time, to diminish the proportion of high and stimulating food, as well as to afford the animal additional exercise. These matters, in fact, require more attention than is usually assigned to them, as they occasionally lead to very serious consequences.

Treatment.—Consult the Materia Medica, for the purpose of selecting appropriately from amongst the following remedies. In respect of the male: Cantharides, Hyoscyamus, Mercurius, Natrum m., Nux vomica, Phosphorus, Sulphur, Veratrum. In respect of the female: Belladonna, Cantharides, Hyoscyamus, Mercurius, Nux vomica, Phosphorus, Platina, Pulsatilla, Sabina, and Sulphur.

Doses.—The administration should be continued, in two-drop doses night and morning, until the symptoms subside.

359. Decrease or Absence of Sexual Instinct.—When there is actual deficiency of instinct or power, arising out of a condition of disease affecting particular organs, or the system generally, the treatment should be such as will obviate the particular assemblage of morbid symptoms present.

Besides the consideration of deficiency of sexual instinct as a disease, and without actual deficiency, it is often desirable to bring the females of domestic animals forward into season, in order to secure all the advantages, whether of market or of growth, which may be derivable from parturition within a particular period; for this purpose, various injurious expedients have been proposed from time to time, but there are very few instances in which the additional profit derived from such nostrums would, even partially, compensate for the deterioration of stock resulting from their use. In case, however, of diminished instinct, or of the intention of promoting the readier heating of the animal—

Consult the article on Materia Medica, for the purpose of selecting appropriately from amongst the following remedies: Calcarea, Cannabis, Conium, Graphites, Hyoscyamus, Mercurius, Natrum m., Phosphorus, Platina, &c.

Doses.—The administration should be continued night and morning, until the contingency occurs (or heat supervenes),—in three-drop doses.

CHAPTER XI.

AFFECTIONS OF LIMBS AND EXTREMITIES.

360. Inflammation of the Feet—Acute Laminitis—Acute (Foot) Founder.—What is popularly termed *founder*, or, more particularly, *foot-founder*—in contradistinction from chest-founder—consists in inflammation of the tendons, muscles, articular ligaments, extremities of the bones, and laminæ of the feet. Ordinarily, the fore feet only are affected; in the severest cases, the hind feet also.

This affection involves at first much constitutional disturbance; shivering; heaving at the flanks; quick, laboring pulse; frequent lying down and getting up; the animal groans with excess of pain, and occasionally breaks out into cold and profuse sweats. It may be occasioned by hard driving and then being allowed to stand in the snow; by snow or ice being suffered to remain in the feet when the horse, warm with exercise, is returned to the stable; by the unceasing strain on the laminæ which must be caused by long maintaining the erect position, as on sea-voyages, especially where it is united with a very great stress alternately laid on one or the other of the feet in attempting to preserve the perpendicular position during the rolling of the ship; by very severe exertion, especially hard riding upon dry, stony roads; by sudden suppression of perspiration; by passing through water when heated, and the like; by omission to dry the feet properly after they have been bathed or washed; by standing still in the cold when heated, or by being suddenly placed in a hot stable (in deep litter) after exposure to severe cold and wet (as, for instance, snow); by metastasis, or some other organic inflammation, that of the lungs in particular, &c., &c.

Symptoms.—The earliest symptoms may be distinguished in the uneasiness with which the animal raises, first one and then the other, of the fore feet, with evident tenderness and caution in grounding them, and without any attempt to strike at or scratch the ground, or to kick with the hind feet; there is evidently a strong inclination to lie down, but the animal makes repeated attempts to do so, and is evidently arrested by the pain and strain to which the feet are exposed in the act of lying down; and when, at last, the animal succeeds in dropping suddenly, it remains continually recumbent, with far less appearance of uneasiness or pain; occasionally the foot, and even the pasterns of one or both feet, will be found hot, very keenly sensitive, dry, and even more or less swollen, especially about the coronet; the sole will be incapable of sustaining the least pressure without severe and evident pain evinced by the manner in which the animal snatches away its foot, snorts, and groans; the slightest blow on the external circumference of the horny hoof will be attended with similar manifestations; the pulse accelerated (generally full and hard), with strong, full, hard pulsation of the arteries about the affected parts in particular; the animal moans, and otherwise evinces much suffering; as the constitutional disturbance becomes more severe, the flanks will heave, and the symptoms will be those of fever.

Acute laminitis, founder, or fever in the feet is at once indicated by great heat in the part, by throbbing of the plantar arteries, and by almost absolute inability of the horse to move. The animal stands with his hind legs drawn up under the body, in order to take the weight off the fore feet. If he is compelled to move, he plants the heels of these feet on the ground, and brings the hind legs well forward.

361. Treatment.—It is necessary at once to remove the shoes and pare down the feet, thinning the sole and crust around. These two are the first steps requisite for the relief of the congestion to the feet, which constitutes the principal symptom of acute foot-founder. Warm baths should be applied to the feet by putting them in small tubs or other vessels containing water at the right temperature, that as hot as can be well borne by the operator's hand. This method is preferable to wet cloths or poultices, although we may be glad to resort to these latter when the horse is unable to stand.

Aconite.—Five-drop doses every hour or two hours, in a little water, when there are excessive lameness; feet intensely hot, especially at the coronet; the horse is unwilling to move; he lies down; groans with pain; stands with hind feet far under his belly; pulse quick and full; there is much fever; respiration more frequent; heat in the mouth.

Arnica may be required when the founder comes on in consequence of hard driving (wounding the feet) on hard or stony roads, as well as when there are rigidity of the legs and inflammation of the feet.

Dose.—As advised for Aconite.

Arnica tincture (mixed with five times its quantity of water), may be used as a lotion; bathing the legs and ankles with it every three hours, or putting the feet (in severe cases), into Arnica baths. Or, cloths saturated with this liniment may be wrapped about the foot and pastern of the affected legs, and pads of tow, similarly saturated, may be folded into the hollow of the sole.

Arsenicum.—Founder from excess of food; after Aconite has removed the violence of the primary symptoms, and where the feet are very tender and painful.

Nux vomica, where there are loss of appetite, contraction or drawing up of the abdomen, paralysis.

Phosphoric acid.—This is one of the most important remedies, and is indicated by *lameness, heat and tenderness of the feet,* softening of the horn.

Consult in the Materia Medica the following remedies: Founder from sudden exposure to cold: *Aconite, Bryonia, Staphisagria, Veratrum.* Exposure to cold after violent exercise: *Conium.* Paralysis of the knees: *Rhus tox.* Severe pains in the feet: *Arsenicum, Nux vomica, Petroleum,* and *Thuja.*

Founder from excess of fatigue: *Aconite,* Opium. Holds the head low, and the legs widely separated, or the pulse is weak: *Rhus tox.*; *Arnica, Nux vomica,* and *China,* when the feet are cold.

362. Founder and Foul in the Foot of Cattle.—Foul in the foot, first; to cattle, sheep, swine, and dogs, as well as to horses, as already pointed out, it is equally applicable; and should be given in five-drop doses to the larger animals, and in three- and two-drop doses to those smaller, and repeated once in two or three hours, according to the severity of the case. Where the symptoms are very violent indeed, recourse may be had to the mother tincture, of which ten drops may be mixed in a pint of water, and about two tablespoonfuls given every hour, until the symptoms abate in violence. This estimate of dose is for cattle; for the smaller domestic animals, the doses should be proportionally less, as just now indicated.

Bryonia may be needed after Aconite, especially where a great reluctance to move and evident painfulness on motion are manifested.

Veratrum may be required when the disease arises from cold after fatigue.

Staphysagria.—Indicated when there is trembling of the whole body and the feet rise one after the other.

Arsenicum, and also **Rhus tox.**, may be consulted when the feet are very painful. The former remedy will be indicated when the whole system appears debilitated, and there is danger of (erysipelatous) inflammation in the feet; in this latter contingency consult also *Rhus tox.*

Nux vomica, Belladonna, Opium, Dulcamara, and Chamomilla, should also be studied, as well as the other remedies here mentioned, and those set down under "Founder in Horses," in the Materia Medica.

Dose.—Give of the selected remedy, when not otherwise directed above, from five to two or three drops, once in three or four hours, mixed in a little water.

365. Foot Rot of Sheep.*—On swampy, spongy soils sheep are particularly liable to this disease, which, though almost exclusively local, is one of the most severe and even revolting character. If sheep be transplanted from firm, dry, upland soils to deep, low, saturated marsh lands, they will be still more likely to suffer. Foot rot is communicated by contagion, that is, by poisoning with the discharge.

Symptoms.—The reversion of the outer edge of the crust upon the sole generally, or on one side only; symptoms affecting the fore feet in particular, with more or less rapid progress, sometimes returning from time to time; symptoms affecting one or more of the feet simultaneously, and sometimes finally attended with unaccountable lameness, and tenderness of the foot, and softening of the horn; detachment of parts of the horn; parting of the crust from the sole; fissures, and dislodgment of the crust and horn, generally exposing the quick, and for some time the continual reformation of a horny coating; enlargement of the coronet; ulceration of various parts of the foot, discharging thin but offensive matter; proud-flesh developed by the ulceration; the inflammatory and suppurative process varies in the period of development; sometimes appearing immediately, and sometimes slowly provoked by the irritating causes connected with the growth of the crust; separation of the coronet and hoof; heat, swelling, inflammation, and ulceration of the interstices of the foot; oily, fatty discharge, concreting with dirt, over the whole of the foot; gradual detachment of the hoof by the internal ulcerative process; the pasterns are affected, and become raw; there is general swelling of all adjacent parts; more or less constitutional disturbance ensues.

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* Pigs are also more or less liable to this disease, with very analogous characteristics.

The great importance of this disease requires a fuller account of its milder and severer forms, which we quote from Gunther.

The mild foot rot of sheep, usually associated with Stomacace or ulceration of the mouth, gradually extends to entire flocks. It commonly begins with fever, more or less violent, which sometimes continues during the course of the disease, and is recognized by symptoms, of which the principal are the following: The animal of a sudden becomes sad, and limps on one or more feet; there are heat, redness, and swelling of the feet, chiefly at the interdigital space, and on the coronet. At a later period the inflamed points are ulcerated, and on the cushion appear vesicles, which at first secrete a fluid clear as water, and pus at a subsequent period. The disease progresses with great rapidity. It generally disappears of its own accord in a few days. In order to accelerate the cure, however, and render it more certain, the foot is to be washed frequently with warm water, the superfluous horn is to be removed when it projects or is any way altered, and *Arnica* is to be employed internally and externally.

Malignant foot rot is known by the following indications: The animal begins to limp, sometimes at first in one of the fore legs or hind legs; sometimes in the two fore legs and two hind legs, until the whole four are affected. The diseased foot is hot and a little swollen; the clefts are separated a little more from each other than in the healthy state. The skin of the interdigital space is red, and exudes a fluid of a bad odor; this fluid gradually assumes the appearance of ichor, which not only inflames and excoriates the surrounding integuments, but becomes effused also behind the horny wall, which is separated in part or entirely from the living parts; sometimes even the integuments, tendons, and the very bones are involved. The animal, then incapable of walking, moves along on its knees, or remains lying down, and wastes away gradually, though retaining generally a good appetite. This form is very contagious, so that when the sheep just attacked is not removed away from the flock, all the others soon become affected. To propagate the disease, it is quite sufficient that a flock should pass over a place which has a little before been walked over by a diseased sheep.

366. Treatment.—This disease must not be confounded with that already described, page 327, as "Rot in Sheep," which consists in an affection of the liver.

In the milder form, and in the earlier stage, as soon as limping is observed, the animal should be examined, and if there be any signs of the separation, especially of the crust from the sole, or of the coronet from the horn, the first prevention will consist in providing the animal so affected with a separate inclosure, lest others be infected, and in carefully removing all dirt which may have been introduced into the fissures, after which the following local application will, with proper precautions, generally prove sufficient to arrest any further progress of the disease.

Tincture of Calendula, constituting a lotion, by the admixture of four parts of water to one of the tincture, should be applied to the parts every three hours for the first day, and three times in the course of the second. Twelve hours should then be allowed to elapse before constitutional treatment is adopted, when resort to Carbolic acid lotion.

In the severer form, the diseased part must be scraped to the quick with a sharp knife. It has been advised by Gunther to bathe the wound and ulcer with salt water and dilute Nitric acid; and by others to employ, when the ulceration is more extended and the disease very malignant, the stronger dilutions of Arsenicum causticum and Ammonia. But we are quite sure that the dilute *Carbolic acid*, one part to forty of water, will do much more good, and advise to use this in preference to all other local applications in this disorder. Relapses, which may result from want of sufficient thoroughness in the paring, cleansing, and bathing with the medicated lotion, must be treated as at first. And for a considerable period after apparent recovery the affected animals should still be retained in inclosures by themselves.

The *internal medication* should consist in the administration of Arsenicum, Nitric acid, or Ammonium causticum,* according to the other symptoms and condition of the patient.

Dose.—The selected remedy should be given in three-drop doses once in three hours; when improvement appears, once in four hours.

The diet should be nourishing but not stimulating, such as mashes and boiled vegetables.

The local applications must be repeated at intervals of three or four hours.

367. Navicular Disease, Groggy Lameness.—Many obscure cases of lameness in horses are caused by disease of the navicular bone, and strain of the flexor tendon that passes over it to be inserted into the bottom of the coffin bone. This navicular bone (a sort of large sesamoid bone) is placed behind and beneath the lower pastern bone, and behind and above the head of the coffin bone.

The symptoms of navicular disease in confirmed cases are very peculiar. In the stable it is indicated by the horse standing either with his legs straight out and bearing his weight on his toe (the heel being raised off the ground); or by the fetlock being flexed, whilst the toe is drawn back and stuck into the ground. In action it is manifested by the animal treading chiefly on his toes, and consequently digging them in the ground. When the horse has been shod a week, the extra wear thus occasioned will have made itself perceptible on the toe of the shoe. The object of the horse in all these peculiar positions and motions is to avoid putting weight on the back part of the foot, which is the seat of the disease.

In cases of long standing the inside quarter of the foot will become straighter, and there will be small circular ridges on that part of the hoof. The horn of the sole will also be found to be increased in quantity, and the foot and the sole will be more concave than natural. From saving of the back part of the foot and consequent absence of pressure on the frog, thrushes will probably make their appearance. Navicular disease may and very often does appear in good open feet, but gradually the above changes will take place. Tenderness will be evinced on the application of concussion to the heels, or at the point of the frog. A further test may be applied by bending up the foot and applying pressure by the thumb to the hollow of the heel. The seat of the disease will be nearly under the thumb.

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* If preferred, three drops of the strong solution of *Carbolic acid* may be placed in a quart bottle, and one pint of water gradually added, shaking the whole violently with each successive addition, and of this mixture one tablespoonful may be given every two hours in cases of malignant foot rot, in conjunction with the external use of this antiseptic as already laid down.

The lameness is most apparent, when the horse first comes out of the stable. It decreases with exercise. Nevertheless, on the day after severe work the horse will be more lame than usual. In doubtful cases therefore the animal should be subjected to strong work, and examined again on the following day.

368. Treatment.—The cure of navicular disease, according to Youatt, is difficult and uncertain. But the homœopathic remedies show here to great advantage, both for the disease of the bone (of which the cartilage may be ulcerated, and the bone itself carious) and of the ligament which plays over it. Only where such ulceration has already given rise to adhesions and other permanent disorganizations, the medicines can have little effect. Perfect rest must be enjoined. *Inflammation* shown by the heat of the foot, must be removed by repeated doses of

Aconite; give five drops every four hours.

Rhus tox. should be given in similar doses, whenever there is reason to suspect a strain or other injury of the flexor tendon. *Many cases of lameness in horses*, whose proper origin and seat and cause even remain unknown, are *permanently cured by this invaluable remedy.*

Acidum phosphoricum may be required when there is reason to suspect inflammation of the cartilages. *Silicea* is indispensable in most cases of advanced navicular disease; this remedy, with Phosphoric acid, may remove the difficulty even after ulceration of the cartilage and caries of the bone have occurred.

Antimonium crudum and **Sulphur** have also been recommended in this disorder.

Dose.—Of the selected remedy give three drops in a little water, three times a day. Consult the Materia Medica for further indications.

369. Thrush.—This affection of the feet of horses is recognized by the discharge of very fetid matter from the frog (from the interstice of the frog). Inflammation of the sensible or inner portion of the frog, is the direct cause which provokes the secretion of such matter, which soon becomes abundant and offensive. The cleft of the frog appears deepened, and assumes the appearance of a crack. Contraction may be considered both as the cause and effect of thrush,—in its former relation,—by exposing the frog to additional and severe pressure, whereby inflammation is provoked. With respect to thrush, as regards the fore feet, it may generally be attributed to this cause. The hind feet are, however, still more frequently affected with thrush, which is attributed to the exposure of those parts to the injurious effect of the foul moisture which may, from want of proper attention, be allowed to accumulate at the lower part of the stall. The tenderness of the frog in this disease may result in serious lameness and aggravation of the disease, by the feet being bruised on the stones.

Thrush as an affection of the feet, peculiar to horses, must not be confounded with aphthæ or thrush of the mouth, which latter affects various domestic animals.

370. Treatment.—Calendula lotion, Arsenicum, third dilution, and saturated tincture of Sulphur, have been advised for local application. And they are all capable of doing good service. Especially the *Arsenicum,* when the discharge becomes putrid and the parts assume a gangrenous appearance.

But we regard the *Carbolic acid* lotion, as already advised in other putrid and malignant affections, and in the foot rot of sheep, as being far superior in its influence in this affection to all others. Bathing the inflamed and ulcerated surface with this lotion, prepared as already directed, will best co-operate with the internal exhibition of the appropriate constitutional remedy.

Strict attention to cleanliness, and placing the animal on a dry floor, are essential to his recovery.

Kreosote.—Three drops four times a day will be found very useful in healing the affected feet and counteracting the morbid influence in the system which produces thrush. Very similar to Carbolic acid, Kreosote is an excellent remedy to give internally in conjunction with the external application of *Carbolic acid* lotion.

Phosphor. acidum is also to be studied in such cases; especially where the inflammation threatens to involve the deeper tissues of the foot.

Dose.—As advised for Kreosote.

Lachesis.—This remedy should be referred to in the Materia Medica, also *Arsenicum, Sulphur, Silicea, Causticum, Nitric acid, Mercurius,* and *Hepar s. c.*

Dose.—Give of the chosen remedy, from ten to five drops, three times a day, in a little water.

Diet.—Light and unstimulating, but nourishing food; rest and perfect cleanliness, with the external and internal medication, will almost invariably perfectly cure this disease in a short time. When it is more obstinate, *Sulphur,* or other constitutional treatment, must be persevered in for weeks, as the difficulty with the feet may be only a manifestation of poor condition of the animal in other respects.

371. Contraction.—Contraction may be the result of a natural tendency, accelerated by the effect of shoeing; of neglect in the sufficiently frequent repetition of shoeing; (frequent removal being highly beneficial when the hoof is evidently predisposed to contraction); excess of paring, especially as regards the bars; slow inflammation of the fleshy parts and coatings of the bone adjacent to the horny surface; neglect in providing moisture (by means of the pad) to the sole when in the stable; irregular and deficient exercise; with rich and excessive feeding, and a superfluity of litter, allowed to remain in the stall in the daytime. If sudden, contraction necessarily involves lameness;—if very slow and gradual, lameness may not ensue, or may be deferred for a long time, but the first development of contraction is usually attended with lameness, more or less severe.

Symptoms.—Shuffling, or very slight lifting of the feet in motion, which occasions repeated stumbling; narrowing of the heels of one or both of the fore feet, especially of the inner heel. Sometimes excessive hollowness and retraction of the sole, the foot being extended from the heel to the toe, but pinched (the crust on either side approximating) from side to side, the interstices on either side of the frog sometimes almost obliterated. The animal always or generally stands with one of the fore feet stretched out in advance of the other, and if one foot only be affected, the foot so stretched out will be that which is so affected; or if both feet be affected, the projection of the feet will be alternated; sometimes the whole of the affected foot or feet may be observed to be, as it were, gathered up and pinched within an unnaturally small compass, and to offer very little surface to the ground; the retraction and indentation of the external form may occur at any part of the circumference between the coronet and crust, but is generally more apparent midway.

Treatment.—Consult the article on Materia Medica, and select from: Ammonium mur., Graphites, Causticum, Calcarea, Mercurius, Silicea, Sulphur, and Thuja.

Doses.—The administration should be repeated night and morning for seven consecutive days every other week until the symptoms are modified.

Careful adaptation of the shoes, and frequent changes of them, regular exercise, and the supply of proper moisture to the foot, will be necessary to prevent the further development of this affection.

of the crust; or if the crust be perforated, and the lameness should at any rate suggest examination, the increased heat and tenderness of any particular part will readily indicate that which is wounded; suppuration rapidly extending over the whole surface between the horny and fleshy parts, and known by the name of quittor, will ensue. Some animals have a trick of cutting the feet by contact, and thereby occasion wounds more or less severe.

Treatment.—For the puncture of the foot, if discovered at first, the treatment should be such as is directed to be pursued for wounds of the foot. The shoe should, however, be taken off, and replaced with great caution.

For quittor, consult the Materia Medica, and select from: Arsenicum, Calcarea, Causticum, Dulcamara, Hepar s., Lachesis, Lycopodium, Mercurius, Nitr. acid., Phosphor. acid., Rhus, Ruta, Silicea, and Sulphur. (See No. 468.)

Doses.—Night and morning, until the tenderness of the foot is distinctly modified; give five-drop doses.

External treatment of wounds of the foot: Tincture of Arnica, if employed before suppuration sets in, will speedily remove all traces of the injury.

To one part of the tincture add four parts of water, and bathe the injured parts with this lotion, at first every three hours, then twice a day, until all trace of soreness or even tenderness is removed.

In cases of wounds, thoroughly cleansing them, and removing any grit, dust, or dirt which may have accumulated, is indispensable. Rest and very gentle exercise, with careful removal of all foulness from the stall (in the stable), and proper ventilation, are equally important.

Where the soft parts have been *lacerated*, *Calendula* will be more appropriate than *Arnica*. The latter is the more exactly homœopathic to bruises; while *Calendula* exerts a more prompt healing influence on other open wounds. This remedy should be used as directed for Arnica.

376. Inflammation of the Foot, occasioned by Lesion, &c.—When an affection of this kind occurs without the characteristic peculiarities of foot rot, it may be presumed to arise primarily from the introduction of dirt and other extraneous substances, and may be the best treated by washing the parts thoroughly with tepid water, extracting all obnoxious substances, and applying

Tincture of Calendula, as directed for the treatment of wounds of the feet.

If any irritative fever be discoverable, consult the article on Materia

Medica, and select from: Aconitum, Arnica, Hepar s., Silicea, and Sulphur.

Doses.—The administration should be repeated every three hours until the constitutional disturbance is subdued; in five-drop doses.

Tincture of Arnica may also be most advantageously employed in the earliest irritative stage of the injury, or if other affection of the foot be discovered, before ulceration is established.

377. Conformation of the Hock.—A good-shaped hock is seldom unsound, whilst one of defective conformation generally becomes diseased, if exposed to hard work.

To know a good from a bad, a sound from an unsound, hock requires some time, trouble, and attention, but not more than it is worth any horseman's while to give. It is good practice to get the bones of a hock, to put them together, to examine the formation of each, and to feel them when placed in their natural position; and then to manipulate and compare with them the prominences of the bones in the living animal, especially on the seat of spavin. With a knowledge of conformation derived from handling the bones, the satisfactory examination of the hock becomes easy.

The hock consists of six bones, namely, the astragalus, cuneiform magnum, cuneiform medium, cuneiform parvum, cuboid, and os calcis. The first five of these may be distinguished as weight-bearing bones, whilst the os calcis or bone at the back acts as a lever to the tendons of the leg. See Plate.

The true hock joint, however, is formed by only two bones, namely, the tibia, or upper bone of the leg, and the astragalus. The other bones, though they possess a limited amount of motion between each other, do not enter into the true hock joint.

Peculiarities of a Good Hock.—The outline should be clean, rigid, and, in an adult horse, well defined. Any puffiness or swelling is a sign of weakness or disease. The reason of this will be explained hereafter under the head of "Bursal Enlargements."

The bones should be large and prominent. Large size is essential to strength, and prominence is necessary in order to afford due leverage and attachment to the tendons and ligaments. Large bones are usually accompanied by large and well-developed tendons and ligaments.

The hock, when viewed from the side, should appear wide both above and below. Strength and size both of bones and ligaments are indicated by lateral width.

The hocks should be neither straight, Plate II, Fig. 1, nor over much bent, Fig. 2. Undue concussion results from the former, whilst weakness and liability to sprain accompany the latter formation. If the hocks are placed too far behind, Fig. 3, there will be a want of propelling and jumping power.

The hocks should be placed directly under the centre of gravity. Any deviation from the perpendicular line laterally, as is the case when the hocks are inclined too much in (Plate III, Fig. 4), or too much out (Fig. 5), is a source of weakness and therefore of disease.

In order to give due leverage to the muscles of the thigh, it is essential that the tibia should run down well into the hock. A well-developed and prominent os calcis is also essential to the leverage of the tendons of the leg. Figs. 6 and 7.

Badly-formed hocks are marked by peculiarities of conformation the reverse of those we have just described.

The diseases found in the hock generally correspond pretty closely with the points in which the conformation is defective. For instance, in upright hocks we may expect bog-spavin and thorough-pin; in overbent hocks, curb; in narrow hocks, spavin and curb may be looked for; in hocks which bow out, thorough-pin; whilst in small hocks there is general want of strength and consequent liability to sprain and disease of any sort.

It is not, however, to be supposed that horses with defective conformation either in the hocks or elsewhere are useless for any purpose. All that we intend to say is that defective conformation entails a special liability to disease. Again, horses which, from defects of conformation, may be unfit for one sort of work, may be available for another. A horse, for example, whose hocks will not stand the violent exertion of hunting, may last for years for quiet riding or harness work.

378. Spavin, Bone Spavin.—Spavin is an exostosis in the region of the hock. It is usually found to involve two or more of the weight-bearing bones. The inner small metatarsal bone of the leg is sometimes, though but seldom, involved.

The conformation of the hock generally has been dwelt upon in the preceding section. The true hock joint consists in the articulation of the tibia and astragalus. This joint is never primarily, and but seldom even ultimately, except as a result of open joint, affected by exostosis.

But besides the true hock joint, there are also joints with a limited amount of motion between each of the other bones, which make up the structure of the hock. The exostosis known as spavin generally forms between two or more of these bones and interferes with their gliding motion; or it may form on the outside of the bones, or partly on the outside and partly between the bones. As stated above, it very rarely extends to or implicates the bones of the true hock joint.

When from undue concussion, pressure, sprain, or such like causes, irritation is set up either in or in the neighborhood of the above-mentioned bones, it is probable that the irritation will be quickly followed by inflammation, more or less severe according to circumstances, of the periosteum and articular surfaces of the bones implicated. Inflammation will, as usual, probably be followed by effusion from the overloaded bloodvessels of the part. In due time the watery parts of the effusion will be absorbed and the remainder will solidify. In accordance with the usual rule of nature the deposition will partake of the character of the part into which it is effused. In short, it becomes bone, or in other words, a spavin is formed.

The probability of the occurrence of spavin in any particular hock is mainly dependent on its conformation. If the hock is large and strong, and its position is good and true as regards the incidence of the superincumbent weight, it is not probable that it will be injuriously affected either by concussion, weight, or sprain. But if there is any defect, either in the conformation, structure, or position, it will probably suffer in some part or other; and at that point, sooner or later, according to the circumstances and nature of the work to which the animal is subjected, we are likely to find disease. (See Plates XII and XIII.)

It is impossible to define accurately the position of spavin. It varies in some degree according as weak or defective structure, or improper position of the hind legs, or incidence of the line of weight, or sprain of the ligaments, or such like causes, may induce pressure or concussion on any particular part. The greatest pressure and concussion, however, are always felt towards the inner side, and hence spavin is always found somewhere on that side. The most common seat is between and towards the front of the cuneiform bones.

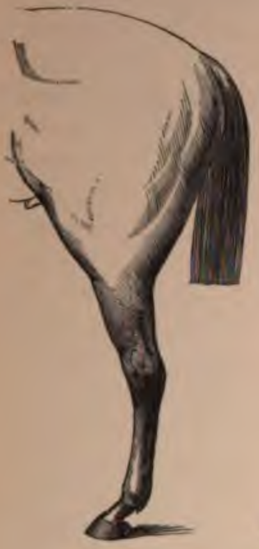
Spavins may occur on the exterior of the bones. In such cases they are easily seen and felt, and hence are called "detectable;" or they may occur between the bones, in which case there may be little or no external enlargement. These are termed "occult" spavins. During the formation, however, of the exostosis some degree of extra heat and tenderness on pressure may generally be detected. After consolidation the existence of occult spavins in many cases can only be divined by the nature of the lameness they produce. (For signs of lameness arising from spavin see following paragraphs.)

As a general rule exostoses on the exterior of the bones arise from

PLATE XII.

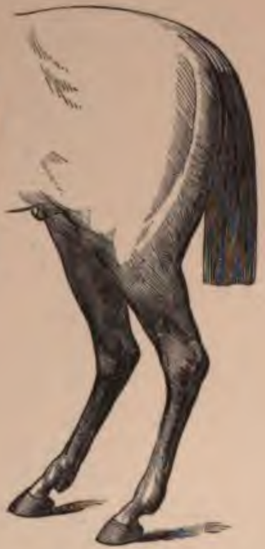
Conformation of Hock.

FIG. 1.



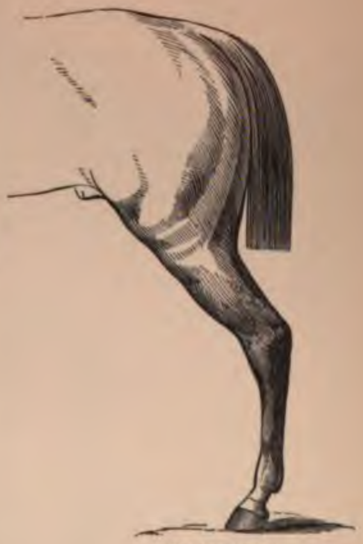
Hock.—Too straight.

FIG. 2.

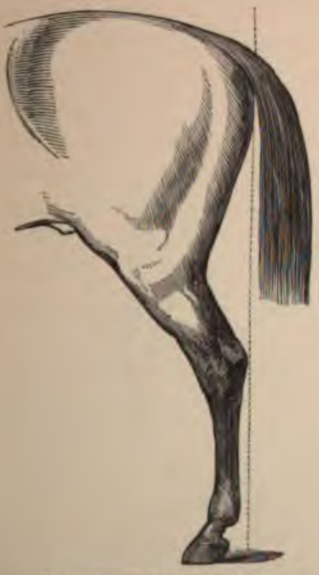


Too much bent.

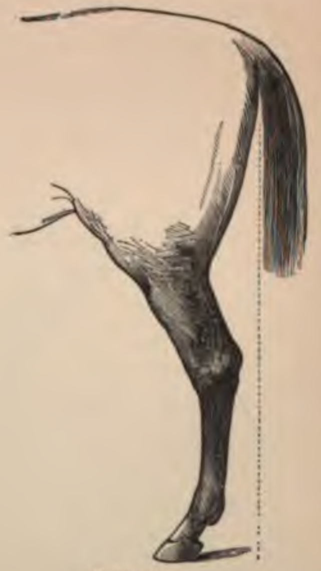
FIG. 3.



Too far behind.



Position usually recommended.

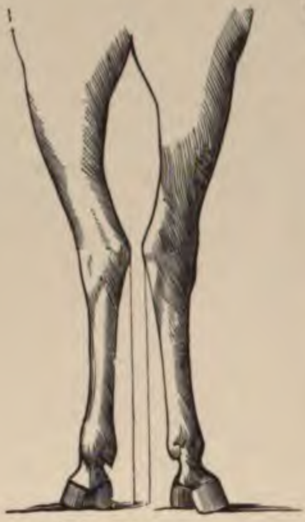


Best position.

PLATE XIII.

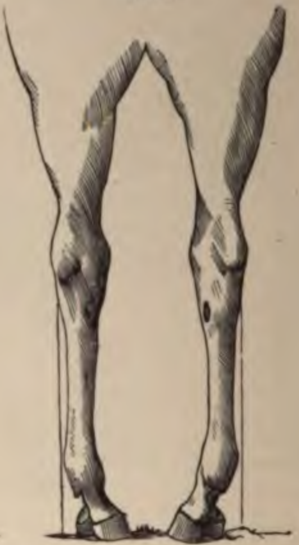
Conformation of Hock.

FIG. 4.



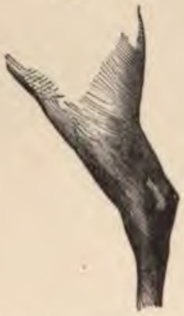
Hocks—Too close.
(Too much in.)

FIG. 5.



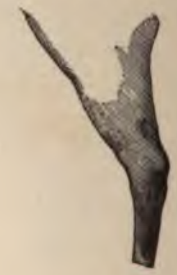
Hocks—Too wide.
(Too much out.)

FIG. 6.



Prominent os calcis.
Hock "well let down."

FIG. 7.



Badly developed os calcis.
Hock "not well let down."

sprains of the ligaments of the hock, whilst those between the bones are produced by pressure and concussion.

The importance of a spavin depends on its position rather than on its size.

If it is situated between the bones, and especially if towards the front, there is always great reason to fear that it may, even though small, or very small, interfere with the gliding motion of the weight-bearing bones. Further, any such exostosis, however slight, is likely, on account of its interfering with that motion, to cause further irritation and inflammation in the part, and ultimately ulcerative disease of the articular cartilages of the bones.

If, on the other hand, the spavin, even though it be between the bones, is placed far back, it is of less consequence, because there is not much gliding motion in the posterior portion of the hock; and therefore the exostosis, even though large, may not occasion much inconvenience. Indeed in many old horses we find that positive union has taken place between the posterior portions of the bones without ever having caused any sensible lameness.

Spavins on the external surfaces of the bones, and not between them, are less serious. They may or may not interfere with the action, according to their size and position in each particular case. Spavins placed posteriorly and not between the bones, even though large, seldom interfere much with the free motion of the hock.

In well-developed cases the lameness arising from spavin is very peculiar and characteristic. It is caused by imperfect flexion of the hock, and in consequence the toe instead of being properly raised is dragged along the ground. Towards the end of the month the toe of the shoe is sensibly worn by this abnormal friction.

In slighter cases some stiffness of the hock and an occasional tripping of the toe may be noticed, and also a sort of vibration in the hock, when the toe comes to the ground. These peculiarities will be most observable if the horse is trotted on hard smooth ground. The animal should be especially watched in turning, when a certain degree of flinching will be detected. Exercise even for a few minutes greatly diminishes the symptoms; but when the horse after exercise is allowed to stand till cool, the stiffness will recur, probably in an increased degree.

In the stable a horse, though only very slightly lame from spavin, will often drop very much, if made to move in his stall to one side, when the weight comes on the diseased leg. In bad cases, in a state of rest, he will usually keep the leg flexed.

379. Splint.—As splint, like spavin, generally arises from or at least is connected with some structural weakness, we propose in the first place briefly to consider the conformation of the fore leg between the knee and the fetlock.

The fore leg immediately below the knee is made up, as regards its osseous structures, of three bones, namely, the great metacarpal or shank or cannon bone, and two smaller bones, called the splint or small metacarpals. Plate X.

These bones are not united together, but each of the small bones is attached to the great or shank bone by interosseous ligaments. The object of this sort of attachment appears to be to allow a very limited power of motion or elasticity between the bones. A similar mode of attachment is found in other parts of the body, where a certain degree of elasticity is required, as, for instance, between the bodies of the vertebræ.

In the fore leg the elasticity conferred by this peculiarity of conformation is useful in diminishing concussion. But this sort of attachment, though useful for the above purpose, gives less strength than absolute union of the bones.

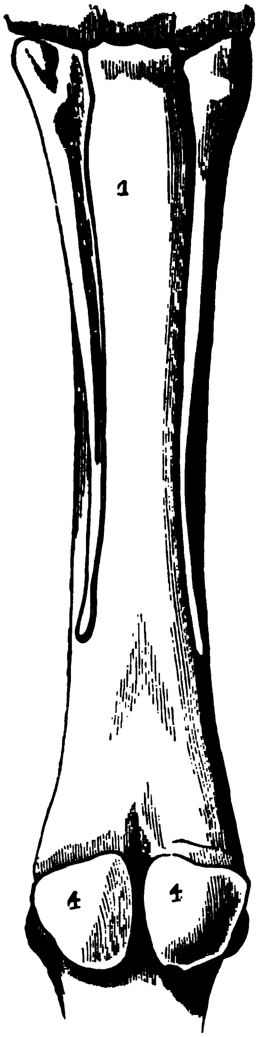
Splint is an exostosis or deposit of bone either between one or other of the small bones and the shank, or upon any of the three bones. The cause of the abnormal growth is irritation and inflammation either in the interosseous ligaments, or in the periosteum, or in the bones themselves.

As the greatest strain and concussion always fall on the inside, on account of its being more under the centre of the superincumbent weight, we generally find the exostosis on or towards the inner side,—except in horses which turn their toes in, and thereby throw the greater weight on the outer side.

Splints, for the purpose of explanation, are sometimes divided into two classes, namely, those which arise from sprain and inflammation of the interosseous ligaments; and those which arise from irritation and inflammation of the periosteum, or of the bone itself. But for practical purposes it is not necessary to maintain this distinction. Indeed, whichever structure be primarily affected, the other also generally becomes more or less involved.

When inflammation is set up in a bone, or in its periosteum, an exostosis is likely to be the result, unless the action is checked in a very early stage. The mode in which osseous material is effused and consolidated was explained on a previous page. The exostosis or "splint" will probably unite firmly the small to the great metacarpal bone.

PLATE X.



1. Great metacarpal bone.
2. Outer small metacarpal or splint bone.
3. Inner small metacarpal or splint bone.

4, 4. Sesamoid bones.

Again, if the inflammation is set up in the interosseous ligaments, it generally results in absorption of the original tissue to a greater or less degree according to circumstances; and in lieu thereof osseous material is deposited, which, when in due time consolidated, unites together the bones between which it is effused. The cause of this peculiar effect of inflammation on fibro-cartilage, of which tissue the interosseous ligaments are mainly composed, is not well ascertained; but its almost invariable occurrence is a well-known fact.

Though the immediate causes of splint are irritation and inflammation in the parts affected, yet the occurrence of these causes in any particular horse and at any particular time is mainly dependent on the conformation of the leg, on the work to which the animal is subjected, on the weight he has to carry, and on his age.

If the bones of the leg are small, or if not positively so, are yet small in reference to the carcass, or if there is undue length between the knee and the fetlock, or if the ligaments and tendons are small, or if the legs are crooked, we may be pretty sure that such defects of conformation will probably give rise to irritation and inflammation in the weakest part.

Again, if the pasterns are overlong, there will be undue stress on the parts above; or if, on the other hand, they are very short, there will be excessive concussion. These effects, though arising from defective conformation below, may nevertheless be felt above, notwithstanding the portion of the leg from the fetlock to the knee may be well formed.

Again, if the legs are not placed well and directly under the centre of gravity, or if the incidence of the weight of the body does not fall fair and true on the legs, there will be irritation and inflammation in the part unduly pressed upon.

But no cause of splint is perhaps more common than the ordinary practice of subjecting young horses to work for which, however good their make and shape may be, their young bones, ligaments, and tendons are unequal. Farmers who breed horses, generally put them to harrow at two years old, they often ride or drive them at three, and hunting men sometimes expect four and always five year old animals to carry them across country.

Horses at an early age may no doubt do a certain amount of work, and perhaps may be none the worse for it; but the work demanded of them is often in excess of the age and capability of the animal. It is mainly from this cause, as we think, that we see so many horses, whose make and shape are unexceptionable, affected with splints.

The exostosis arising from these and such-like causes usually appears [illegible] the middle is [illegible] appears in the [illegible]

[illegible] the number, in [illegible] a horse. [illegible]

[illegible] generally [illegible]

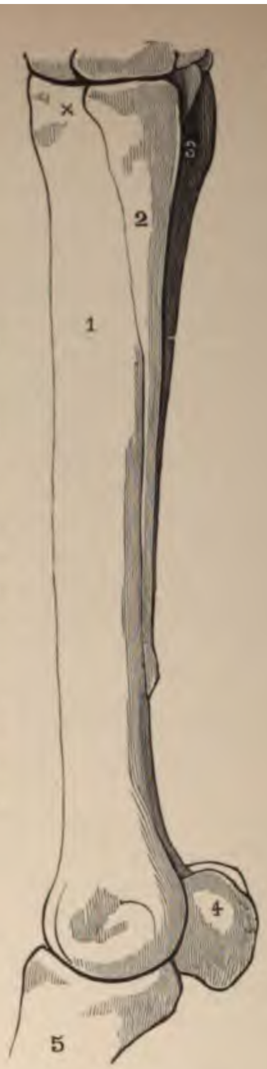
[illegible] cases, [illegible] from [illegible] in the [illegible]

[illegible] appears in the [illegible] and [illegible]

[illegible] in any [illegible]

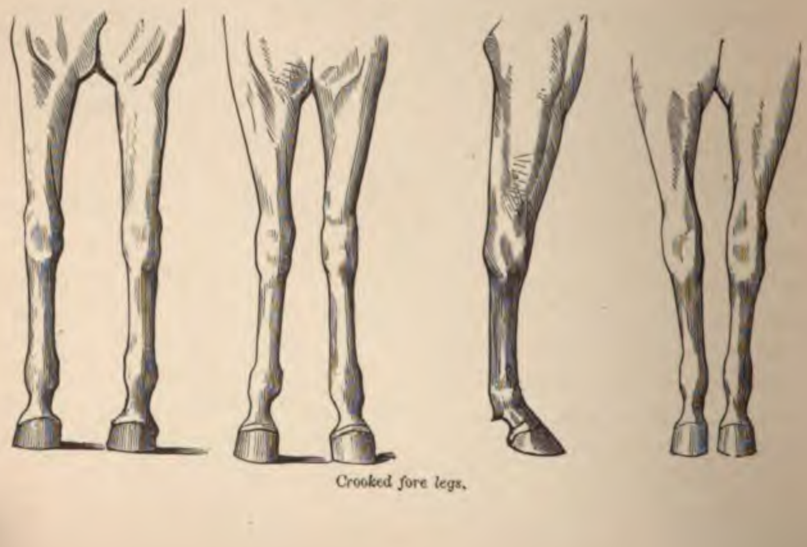
[illegible] of a splint is dependent upon its position in reference [illegible] the passage of the tendons and [illegible] its size. If it is so placed that its pro[illegible] interfered with by the other leg in [illegible] a serious evil. If it is not so placed, the mere [illegible] of but little consequence. This question can only be [illegible] by actual experience in the particular horse affected. A splint in one horse from some peculiarity of action may be interfered with by the movement of the other leg, whilst one in an exactly similar position in another horse may not suffer.

PLATE XIV.



1. Great metacarpal, otherwise called the cannon or shank bone.
2. Inner small metacarpal or splint bone.
3. Outer small metacarpal or splint bone.
4. Sesamoid bones.

× Seat of speedy-cut.



Crooked fore legs,

As a general rule, splints which are well forward, are seldom interfered with; whilst those on the side and those situated more posteriorly are oftener struck. Splints which are high up, near the knee, are in every respect in the most objectionable position, both because they are especially apt to be struck by the other leg in action, and because the inflammation arising from such blow or repeated blows is very likely to induce a renewed growth of the exostosis, which may extend to and implicate the bones of the knee.

Splints which are situated far back, are liable to interfere with the free motion of the flexor tendons or of the suspensory ligament. The former case is exceedingly rare, but the latter is not very unfrequent. As a rule, however, hard parts give way to the softer structures, and hence we generally find that tendons and ligaments after a time succeed in making a free and smooth passage for themselves.

Splints on both sides exactly opposite to each other are more liable, as we might expect, than others to interfere with the free motion of the suspensory ligament and occasionally with the flexor tendons. Independently, however, of such interference, the occurrence of exostoses on both sides indicates great general weakness in the structure of the leg.

Speedy-cut.—An exostosis, not connected either with the interosseous ligaments or with weakness of conformation, is sometimes found on the inside of the leg near the knee (see Plate), which arises from repeated blows on the part by the foot of the other leg. The peculiarity of action which produces this effect is known as speedy-cutting. Horses with this defect should not be purchased. They are dangerous to ride, especially at a fast pace. The pain produced by the blow is sometimes excessive, and may cause the animal to fall at once on his knees.

Almost all splints during their formation produce lameness, both because the new deposit causes pressure on the periosteum, and because the periosteum and the bone itself under inflammation are highly sensitive of any concussion, such as that arising from trotting. The degree of lameness is, however, very uncertain, and appears to depend more on the sensitiveness of the parts in the particular animal than on the amount and size of the deposit. In some cases the lameness is scarcely perceptible and of very short duration, whilst in other cases it is very marked.

When the splint has fully formed and the irritation and inflammation attending its growth have passed away, the horse will generally again go sound.

380. Sore Shins.—The disease known as sore shins is primarily inflammation of the periosteum of the anterior portion of the metacarpal bones from the knee to the fetlock. It arises from the concussion produced by fast work. Hence it is common in young race-horses, whose frames are not fully formed and consolidated. They not only do very fast work, but they often do it at a season of the year when the ground is apt to be hard.

After a time, from inflammation of the periosteum, ossific matter is thrown out, which forms in small nodules, or in some instances in thin layers on the surface of the bones.

381. Ringbone.—Ringbone is an exostosis, either on the upper or on the lower pastern bone, affecting in the one case the upper pastern joint, or in the other case the lower pastern or coffin joint around the coronet.

Ringbone more often affects the hind than the fore fetlocks. The degree of lameness is much greater in the lower than in the upper disease.

False ringbone is an exostosis on the bodies of either of the above bones, not affecting or interfering with the joint.

Ringbone is generally connected either with weakness and consequent sprain of the fibres of the lower divisions of the suspensory ligament, which are inserted into the anterior part of the coronet bone; or with sprain of the articular ligaments of that bone; or it may arise from concussion, or from a blow, tread, or other wound, or from any cause producing undue or unusual strain on the ligaments of or about the fetlock. From any of these or such-like causes inflammation may be set up in one or other or in both pasterns, and an ossific deposit may be the result. In some cases a predisposition to this disease appears to be hereditary.

Ringbone is common in horses with long pasterns, where there is necessarily a tendency to weakness; and also in animals with unduly short or upright pasterns, in which formation there is a tendency to excessive concussion.

Lameness arising from ringbone (as is usually the case when an osseous structure is affected) is more perceptible on hard than on soft ground. The special peculiarity to be noticed is some stiffness or want of flexion in the fetlock joint and a consequent snatching up of the foot in action. Some swelling and heat are also in most cases, even in the early stage, apparent about the fetlock, and in a later stage increased heat will invariably be detected.

Ringbone, when fully formed and consolidated, will produce lameness or not according to the extent, and still more according to the position of the exostosis. If it is so placed as to interfere with the action of the joint, the horse will probably be incurably lame. In slight cases no further mischief occurs than some diminution of the elasticity of the tread. We must, however, warn the reader, that with the renewal of severe work inflammation is apt to be again set up, accompanied with a fresh deposition of bone.

The formation of ringbone, especially if it appears in more than one fetlock, is generally a sign of weakness or defective formation; and therefore an intending purchaser will do well to think twice before he buys a horse so affected, if he wants him for hard or fast work. But when the exostosis is found on only one fetlock, there is a probability, that the inflammation giving rise to the ossific deposit may have originated in a blow or tread, or some such accidental cause.

382. Ossified Cartilages, Sidebones.—This disease, otherwise known as sidebones, consists is ossification of the elastic lateral cartilages or wings of the bone of the foot. Nature has substituted cartilage for bone in this part in order to give greater elasticity towards the heels. Any alteration in this structure, such as its conversion into bone, must interfere with the elasticity of the tread, though it may not occasion positive lameness. The bony deposit may, however, be so extensive, as to materially alter the shape of the coffin bone; and in such cases lameness will be the inevitable result.

Heavy coarse cart-horses are most subject to this disease, and in them the deposit is often very large. In light horses it seldom becomes so large as to be visible to the eye. The change in structure, however, is easily ascertained by feeling the wings of the bone of the foot. If they are affected with ossification, they will be hard and immovable instead of elastic.

Sidebones are generally supposed to be the result of inflammation set up in the lateral cartilages by excessive concussion or by an accidental blow, wound, or tread. The tendency of cartilaginous structures under the influence of inflammation to become absorbed and replaced by bone has been already noticed.

It is probable, however, that they also frequently arise from the practice of shoeing heavy draft-horses with large calkins, which prevent the heels from coming to the ground, and thereby deprive them of their natural elastic motion at each tread. When a part intended by nature for motion is long deprived of that action, we frequently find that it becomes solidified. This result is often found in joints when long deprived of motion.

Others, however, whilst agreeing with the author, that high calkins are a frequent predisposing cause, think that they produce their injurious effect by causing undue pressure and concussion on the back of the foot, and hence excite inflammation in the part.

Sidebones, in common with exostosis in other parts, sometimes have their origin in hereditary predisposition.

As in other cases, where the seat of lameness is in the osseous structures or in the foot, the horse will be more lame on hard than on soft ground.

There can hardly be said to be any special peculiarity about the lameness arising from sidebones, except a certain degree of stiffness of action. When, however, the above general indications have been given, the immediate seat of the disease in the case of sidebones can always be detected by manipulation.

383. Treatment of Spavin, Splint, Sore Shins, Ringbone, and Ossified Cartilages.—In most cases the cause of these various and yet similar affections may be traced to some external injury.

Arnica lotion, consisting of one ounce of tincture of Arnica to fifteen ounces of water, may be applied four times a day; and ten-drop doses of the same remedy in dilution, given at intervals of four hours.

Mercurius corrosivus lotion, consisting of sixty grains of this drug dissolved in one pint of hot water is very highly recommended by Dr. Moore, as an injection in fistulas, quittor, &c.; and as a liniment for the reduction of splints, bone-spavins, ringbones; in thickening of the sheaths of tendons, and in some parasitic diseases of the skin. When rubbed in the skin gets tender and scurfy in a few days; it should then be discontinued for a day or two, and the part rubbed with oil, and washed well with soap and water; and then resumed. The following cases of spavin and incipient ringbone will show his method of treating such cases, and illustrate the splendid action of homœopathic remedies in such disorders.

Spavin.—A horse belonging to Colonel Dudley de Ros, is said to be lame in the fetlock joint. On examination I find lameness of right hind leg; slight enlargement at the spavin place of hock, with heat and pain on pressure. I ordered this part to be rubbed, night and morning, with the *Merc. cor. lotion*, and ten drops of the sixth dilution of *Merc. cor.* to be given night and morning. In a month he was sound, and went to work.

Incipient Ringbone.—I visited, by the recommendation of Lady F. Russell, a carriage mare belonging to Colonel Ashley. She has been examined by Messrs. Mavor, who pronounce the lameness to arise from disease of the knee-joint, and recommended the mare to be sent to the farm, and have repeated blisters applied to the knee. I found that lameness was clearly due to incipient ringbone, and the result of the treatment confirmed this diagnosis. There was lameness on the right fore leg; slight enlargement round the pastern joint, with heat and pain on pressure. A lotion of *Mercurius cor.* (prepared above stated) was applied night and morning; and of *Merc. cor.*, sixth dilution, ten drops were given twice daily: she was sound in a fortnight. Twelve months after she was still quite sound.

During the first or inflammatory stage of ringbone, when the animal is evidently suffering every time the joint is moved, and the parts are exceedingly hot, tender, and more or less swollen, the arteries throbbing violently, as may not uncommonly occur after a sudden rick or sprain of the joint, the development of ringbone may be entirely prevented by the internal and external employment of Aconite.

To one part of tincture of Aconite add six parts of water, saturate a linen rag therewith, and bind it round the parts, keeping it continually moist until the inflammation subsides.

The following remedies, in addition to those above mentioned, have been employed in these disorders with success; and for their particular indications consult the Materia Medica.

For spavin, Rhus tox., internally and externally; Arsenicum, Silicea, Sulphur, Baryta carb., Iodine, Spongia, and Phosphorus.

For ringbone, Rhus tox., Calcarea carb., Iodine, Lycopodium, and Silicea.

For splint, Phosphor. acidum, Silicea, Rhus tox., Ruta, and Causticum.

Rest as much as possible will be necessary to enable the animal to recover from these disorders. Cold applications have also been advised; these may take the form of the Arnica, or Aconite, or Rhus tox. lotions above recommended.

Dose.—Of the chosen remedy give the five-drop doses three times a day, for the first week; then night and morning.

384. Bursal Enlargements.—Thorough-pins, bog spavins, windgalls, and all such like affections, in whatever part appearing, may all be conveniently classed under the common head of Bursal Enlargements.

From these general remarks on the nature of synovial membranes and on the causes of bursal enlargements, we pass to the consideration of the particular affections, which bear various names according to the part in which they appear.

386. Bog Spavin.—Bog spavin is distension of the bursa of the true hock joint. This joint, as explained in the section on spavin, consists only in the articulation of the tibia and astragalus. The other bones of the hock do not enter into it. The swelling shows itself primarily in front, because in that part the capsule is large and loose, and not bound down by bones or ligaments, and therefore it is easily distended.

Bog spavin is most frequently found in upright-shaped hocks, because that formation induces concussion and irritation. It is also commonly found in weak hocks of any description, because in them any overexertion is likely to be injuriously felt, and therefore is very liable to cause irritation.

Of the treatment of bog spavin we shall speak hereafter in common with that of other bursal enlargements.

387. Thorough-Pins.—Thorough-pin is the name given to a bursal enlargement, which occurs at the upper and back part of the hock, beneath the great extensor pedis tendon. The swelling appears sometimes on one side only, but more frequently on both sides.

There are two kinds of thorough-pin, namely, those arising from irritation in the true hock joint, and those which are caused by irritation or sprains of the flexor pedis tendon.

Thorough-pin arising from irritation of the true hock joint is in fact only a further development of bog spavin. The increased secretion of synovia, for reasons already given, shows itself primarily in distension of the lower part of the bursa. When this portion is full, any further increase shows itself in the upper part. The swelling appears equally on both sides, and the fluid may by moderate pressure be forced from one side to the other. Hence is derived the name of thorough-pin or running "through" from side to side.

The other and more common description of thorough-pin is not connected with the true hock joint; but arises from irritation of the flexor pedis tendon.

This tendon is tightly bound down at its upper part by the ligaments at the back of the tibia and again below as soon as it reaches the inside of the hock. Hence any increased secretion of synovia can only lodge in the intervening space, *i. e.*, in the hollow of the hock, either on one or both sides.

Arnica lotion, as directed in the preceding section—one part of the strong or mother tincture to fifteen of soft water—should be employed and well rubbed in four times a day, in all cases of this kind which result from external mechanical injury or concussion. Internally, ten drops of the dilution may be given at the same time thrice daily.

Rhus tox., both externally and internally, should be employed in all cases which appear to follow some internal injury, as a strain of the ligaments, in the same manner as directed for Arnica.

Mercurius corrosivus, as a lotion, and internally administered, as directed in the preceding section, will be found very efficacious in the older cases, and after all the aid possible has been obtained from Arnica and Rhus.

Consult also in the Materia Medica the following remedies, and give of the one whose symptoms best correspond to the case in hand, five drops three times a day: Arsenicum, Hepar s. c., Lycopodium, Ledum, Belladonna, Sepia, Pulsatilla, and Thuja.

Bursal enlargements have a marked tendency in many cases to decrease in old age, and it is not uncommon to find the legs of an old horse quite or almost quite free from them, although in his younger days he may have been much disfigured. The cause of their disappearance is no doubt due to the generally decreasing energy of the reproductive system in old age.

391. Swelling of the Legs—Mallenders and Sallenders—and Grease.—*Swelling of the legs*, particularly of the hind legs, which occurs chiefly at the spring and fall, or in horses just taken up from grass, or owing to irregularity and want of exercise, or to constitutional debility, is in any case merely symptomatic, and should lead the reader, in the absence of other distinct indications of constitutional disturbance, to consult the article on the Specific Effects (Materia Medica), under the heads of "Extremities."

Mallenders may be described as an eruption of a scurfy character, occurring in the fold of the knee-joint—in the fore leg; and *Sallenders*, the like eruption, occurring in the fold of the hock (in the hind leg).

Treatment.—Consult the Materia Medica, and select from: Antimonium c., Arsenicum, Baryta c., Calcarea, Carbo veg., Conium, Dulcamara, Graphites, Kali carb., Rhus, Sepia, Silicea, Sulphur, Petroleum, and Thuja.

Doses.—Five drops, morning and evening, until the eruption diminishes.

Tincture of Sulphur (saturated), in the proportion of one part to six of tepid water, should be employed to bathe the parts twice a day until the eruption diminishes, when it should be left to complete its disappearance. Or else we may apply the Sulphur ointment similarly. But in either of these cases, Sulphur must be the remedy internally exhibited.

Grease is characterized by deficiency of the greasy, oily matter which lubricates the heel of the horse. This disease, which is purely local, occurs more frequently in the hind than in the fore feet, originating in want of precaution and attention to cleanliness, the proper drying of the heels after washing or otherwise becoming wet, and the removal of any dirt which may be accumulated, as also to sudden exposure to cold or wet, especially at night, when the stall is well littered and the heels are consequently warm, and when more transpiration takes place. Grease is indicated first by the absence of the natural greasy feel of the heel; dryness with heat and redness of the skin, degenerating into an itching, and subsequently cracking eruption, until the whole of the heel becomes fissured more or less deeply, very sore, and develops fungous excrescences. Some instances occur of these cracks extending to the adjacent joints, and further up the leg, when a discharge of thin, watery matter takes place, and the heat of the skin is so great that immediate evaporation takes place, and the *steaming* may be observed; or, in more serious cases, the fungous excrescences are very tender and easily provoked to bleed and scabby, and finish by becoming covered with a callous horny skin forming a cluster of protuberances, and emitting a most loathsome discharge.

Treatment.—On the first appearance of the scurfiness, dryness, and heat of the heels, care should be taken to remove the hair and the foul surface, and to wash the parts frequently and thoroughly with tepid water, thoroughly drying them afterwards; and a solution, consisting of one part of tincture of Aconite to ten of tepid water, may be used wherewith to bathe the parts twice a day for two days; after which the saturated tincture of Sulphur may be used in the like proportions. In the event of dry cracking having supervened, Arnica is preferable; and, again, if suppuration has set in, Calendula only may be used. The proportions and method of application are the same of these also.

392. Luxation of the Patella.—This bone is sometimes displaced under the influence of a blow, a false step, a slip, violent effort, a sudden leap, &c. The horse then holds his leg stiff and extended; he cannot rest on it, and when obliged to walk, he draws it along. The

reduction is effected by having sufficient help, and placing a side line, with a hobble, on the pastern of the affected limb; and drawing the hind leg forward; the surgeon is then with both hands to bring the bone into its place. At times, it takes place of itself, if the horse makes the slightest movement. However, the ligaments are, in general, weakened to such a degree, that the slightest cause suffices to reproduce the luxation. Hence the affected part must be treated for some days with strong tincture of *Arnica* externally, and as long as the treatment lasts the animal should be left in a state of absolute rest.

393. Broken Knee.—Broken knee is a term used somewhat indiscriminately by the public to express any injury of the knee, whether it be a mere abrasion of the skin or hair, or a more serious injury, or the true joint be laid open.

Injuries of this kind may be grouped into three classes: 1. Those which consist of simple bruises, without perforation of the skin. The knee is hot, painful, and swollen; some hair is removed and the skin somewhat grazed. 2. Those in which the skin is cut through, torn, and jagged, and the tissues underneath more or less injured. 3. Those in which the knee is cut, bruised, lacerated, and pulpified, and the knee-joint opened into as well. This last accident is known by the escape of clear fluid, like white of egg. The injury is often so severe as to cause death, or to necessitate the destruction of the animal.

Treatment.—The treatment consists, in the first class of cases, in washing the knee to remove dirt, and in frequently applying *Arnica lotion.* In the second class, wash to remove dirt and blood, adjust the cut and torn skin as accurately as possible, and apply the same lotion. Give internally ten drops of *Arnica* three times a day, and *Aconite* in the same way if there is any feverishness. In severe injuries some inflammation will generally arise in the injured knee; the tissues ground down to a pulp by the force of the fall will slough off; and the wound will heal from the bottom, leaving, necessarily, a permanent blemish of greater or less extent. Here, hot fomentations and linseed poultices, medicated with *Calendula lotion,* are required. When the inflammation in the wound is gone, nothing more is required but this last lotion to complete the cure. The third class, or opened joint, is treated by itself in the following section.

394. Open Joint.—In horses the knee, hock, stifle, and pastern joints are liable to be penetrated or broken into by pointed instruments, by blows, or falls, or other accident. This wound is characterized by a flow of synovial fluid, "joint-oil," from the joint. The synovial fluid in appearance and feel is not unlike the white of an egg. Severe pain and more or less irritative fever supervene, varying with the size of the opening and the importance of the joint. If the interior of the joint take on inflammation, the fever becomes severe, the pain intense, and lockjaw may ensue, and the horse die, or be ruined. The supervening of inflammation in the interior is not, however, a necessary consequence, even though the joint may remain open for some days. In healthy subjects with judicious treatment joints have been known to remain open upwards of a week without any such occurrence, and have ultimately healed up satisfactorily.

Treatment.—We quote from Dr. Moore concise directions for treating these important and difficult cases. The first bar to recovery lies in the impossibility of keeping a horse quiet, and therefore in keeping the joint perfectly motionless—rest being, in such cases, of incalculable aid; and the second hindrance lies in the condition of the wound itself, which cannot close and heal up so long as a fluid is constantly running through its sides. When the wound is a large one, or when it implicates a large joint, such as the stifle, the horse must be slung. If there is much pain and feverishness, give ten drops of *Aconite* every three hours; if the pain and fever are not very pressing, give *Arnica* in the same way. When the flow of joint-oil is considerable, give *Silicea* in the same doses. According to my experience the best local application, one that is absolutely indispensable, is fresh *slaked lime* very finely powdered. Lift some of it on the handle-end of a spoon, and apply it directly to the wound at the point where the fluid is escaping, and press it on with slight force. One attendant must wait on the horse during the day, another during the night, and *whenever* any oozing is seen a fresh application of the powder must be made at the point of issue. The lime and the oil form a thick, hard, adhesive crust, which, in course of time, if assiduously added to, stops the running, and allows the wound to close. None of this crust should be removed until the discharge is completely arrested, but the fresh applications must be made on the top of the old. From a considerable experience of this treatment, I can strongly recommend it. Even very bad cases should not be given up The great point is, the repeated applications night and day whenever the oil makes its appearance. *Silicea* should be continued from first to last; but alone it can do but little.

In opened knee-joint, it is possible to keep the leg in comparative rest by fixing on a gutta-percha splint four inches broad and twelve [illegible]g. Dip it in hot water to soften it; then fit it to the inequalities of the back of the leg, and secure it by a bandage encircling the leg above and below the knee.

Open joint of lower jaw of horses and oxen may occur from wounds.

The *joint between the lower jaw and the temporal bone of the skull* may be opened by a blow; the joint-oil or synovial fluid escapes, and the parts become swollen and painful. If care be not taken, the joint inflames, matter runs out, and the bone becomes diseased. Stiffness of the joint may remain, preventing mastication, and thus leading on to starvation.

Treatment.—Keep the jaws fixed by a head-collar furnished with a strap going round the face and lower jaw above the openings of the nose; feed on fluids until the wound is firmly healed up; constantly dust on *powdered lime* whenever the fluid exudes; and give ten drops of *Silicea* three times a day.

CHAPTER XII.

LAMENESS—SPRAINS—RHEUMATISM—MYALGIA—INJURIES—WOUNDS —SUPPURATION—ABSCESSES AND ULCERS.

395. Lameness.—The paramount importance of this subject leads us to extract from Colonel Fitzwygram's work* the following exhaustive account of the nature and causes of lameness, and the mode of determining its exact location. And we do this the more freely since all that needs to be said of the homœopathic treatment of this disorder may be summed up in very few words when once its seat is ascertained.

Lameness is only a symptom of disease. It may be produced either by pain, by inability, by malformation, or by accident; or it may arise from disease of the cerebral or nervous system, as in injuries of the spinal cord, or in stringhalt.

Lameness is usually, but not invariably, a sign of pain. In anchylosis of a joint, for instance, there is decided lameness from mechanical impediment, but no pain.

Again, loss of elasticity of movement, such as is common in old horses, or in animals which have done much work, may exist to a degree scarcely distinguishable from lameness.

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* "Horses and Stables."

various cases. He must not, however, imagine, that a knowledge of this difficult portion of the art of the veterinarian can be acquired by reading only. Constant practice, keen observation, much trouble and time are also required.

Mode of Examining a Horse.—It is essential, that the horse should have been in a state of rest for some hours previous to being examined as to soundness. Some ailments are not noticeable, and many ailments are less noticeable after a horse has been a little time in exercise.

Before a horse is brought out for examination, very much is to be gleaned in the stable about his soundness or otherwise by noting the position in which he stands, and whether he bears his weight evenly on all his legs, or whether he points either foot or flexes his fetlock; and as regards his hind quarters, whether he keeps either leg flexed, or in other cases, one before the other. He should be very narrowly watched, as he turns in his stall, as any stiffness or irregularity of action is especially noticeable in this preliminary movement.

For examination, the horse should be led out with a long snaffle rein, with his head as loose as possible, first at a walk, and then at a very slow trot. There should be nothing to excite him. Everything around should be in a state of rest. Lameness may escape detection, if the animal is excited. A horse should not be examined in a dealer's yard, except the place is perfectly quiet; nor unless we can be quite certain that he is brought out of the stable without having been previously exercised.

The examiner should keep his eye on *the very first movements*, and observe if the animal trips or knuckles, and also how he puts down his feet, whether he uses them both alike, and whether he flexes his hocks equally. All defects and deviations from true and level action are more noticeable in the first step or two than afterwards. Allowance must, however, be made for the effect of peculiarities of conformation on the action.

After the horse has been trotted away from the examiner, he should watch him most narrowly as he turns round. Many defects are more easily seen in the act of turning than at any other time. This is especially the case in stringhalt, spavins, &c.

When the horse is trotted on hard ground, the equal sound or otherwise of the descent of the feet will strike the ear. An inequality of sound may be detected, whilst a slight unevenness of motion may perhaps escape the eye. The sound, one, two, three, four, of the even trot is easily distinguished from irregularity of action.

giving the animal rather severe work, and leaving him to stand in the stable till cool in order to develop the ailment.

Although certain general rules may be given to aid in the detection of the seat and cause of lameness, yet it is quite impossible to give, by any description, rules sufficient to guide the novice in all cases. No attempt will be made to do more than point out the leading peculiarities of disease in various limbs and structures, which may assist the careful and laborious inquirer in gaining the needed practical knowledge. It is possible to lay down broad and general rules; but it is not possible to lay down precise and sharply defined rules; because constantly varying circumstances induce such innumerable modifications of symptoms.

Excluding from present consideration those cases in which an external wound or blow at once indicates the seat and cause of lameness, we proceed to investigate those in which the outward causes are less apparent.

Side on which the Horse is Lame to be first ascertained.—In every case the first point is to determine, on which *side* the horse is lame. He naturally saves or favors the injured side, and therefore his weight comes down with greater force on the opposite leg.

In the forehand, some information may generally be gained by watching the pasterns. The pastern on the side on which the disease exists, usually remains more upright than the other, both because less weight falls on it, and because the animal generally throws as much weight as possible on the toe. An exception, however, occurs in laminitis, in which disease the horse throws his weight on his heels. In the hind quarter, the hip of the diseased side for similar reasons is generally carried somewhat higher than that on the sound side.

Some difficulty occurs, where a horse is lame in both fore or in both hind legs. It is seldom, however, that the lameness affects both sides equally.

Whether Lame Before or Behind.—Having ascertained the side on which the lameness exists, the next point is to find out whether the horse is lame *before* or *behind*. Here greater difficulty occurs.

The motion of the hips affords the best indication on this point. If the horse is lame behind, there will probably be a difference in the level of the hips in action; whilst if he is lame before, the level carriage of the hips will not be affected. This point will be best ascertained by standing behind the horse, whilst the man in charge leads him straight away at a walk or at a trot.

It is also to be noted, that in cases of decided lameness behind, the head descends, when the leg on the side on which the horse is lame cause may be found in some exostosis, such as a spavin, splint, ring bone, or sore shins. The peculiarities connected with such lameness and the best means of detecting the seat in each particular case, have been detailed in the sections on Spavin, Splint, and Sore Shins.

Of Lameness in the Forehand, when the Horse is more Affected on Soft than on Hard Ground.—If, however, the lameness being in the forehand, the horse is more lame on soft than on hard ground, it is probable that the effect is due to sprain of some muscle, ligament, or tendon.

These causes are so frequent and so important, that the author deems it necessary to devote to their consideration a separate section on Sprains of the Fore Leg.

Lameness in the Hind Quarters.—We have hitherto supposed the seat of lameness to be in the forehand. We must now suppose, that, by the rules laid down in the preceding paragraph, we have ascertained its seat to be in the hind quarters.

With some modifications, the general rules given above for detecting the particular seat of the lameness apply to hind as well as to fore quarters.

The level movement or otherwise of the hips is our first and chief guide. If the horse is lame in the hock or below it (and in the great majority of cases the seat of lameness is in the hock), the hip on the side in which the disease exists is usually carried somewhat higher than the sound one.

Before trotting the animal, note should be taken of the conformation of the hind quarters. For this purpose the horse ought to be made to stand so as to bear his weight equally on both hind legs. The relative equality of the height of the hips and the development of the muscles on both sides will then be well seen. If the horse is not made to stand well and correctly balanced on his hind legs, an erroneous opinion may easily be arrived at. It not unfrequently happens that a portion of the projecting part of the bone of the hip has been knocked off. It is important that this accident, if it has occurred, should be noticed before the horse is trotted down, because otherwise the fact of one hip being carried higher than the other would lead the unwary to suspect lameness in the opposite leg, or perhaps to think that the muscles had wasted away from previous disease.

If, on the other hand, the horse should happen to be lame from an injury or sprain *above* the hock, the hip on the lame side will generally droop somewhat in action. A further peculiarity will be noticed in the horse swerving from that side, *i. e.*, not carrying his body in a straight line. In some cases, however, of lameness behind there is no perceptible difference in the level of the hips in action.

When the horse is trotted down, the examiner should at first stand directly behind him. In this position he will best observe the movements of the hips, and whether the body is carried in a straight line or not. The want of due and equal flexion in the hocks will, however, be seen more plainly by the examiner standing on the side.

Next he must ascertain whether the seat of lameness is in the foot or elsewhere. Lameness, however, in the hind feet is very rare compared with the many cases in which it occurs in the fore feet.

Hence if the horse be more lame on hard than on soft ground, we may at once suspect that some exostosis and probably spavin is the cause. For further details and special symptoms of such lameness the reader is referred to the section on Spavin.

If, on the other hand, the horse be more lame on soft heavy ground than on hard ground, we shall probably find that sprain of some of the ligaments is the cause. But whereas in the fore leg the sprain usually occurs between the knee and the fetlock, in the hind leg the seat of sprain is generally in the hock.

In nine cases out of every ten, the cause of lameness in the hind leg will be found in the hock; it may be a sprain or it may be an exostosis. The reason of such special liability to disease in the hock has been already explained in the sections on the conformation of the hock and on spavin.

Sprains of the Loins, and Stringhalt.—Sprains of the loins and also incipient stringhalt are sometimes not noticeable, so long as the horse moves forward. In every case, therefore, the animal examined should be "backed," and turned round sharply, when any such defect will be more apparent.

Rheumatism as a cause of Lameness.—Rheumatism may affect either the fore or hind quarters. The lameness resulting from it very much resembles that arising from violent sprain of a tendon; but it is easily distinguished from it by the lameness appearing and disappearing suddenly, and by its shifting about from place to place. For further details on this subject the reader is referred to the section on rheumatism.

Accidents and such-like causes of Lameness.—Besides lamenesses arising from specific affections of particular muscles, tendons, ligaments, joints, bones, &c., there are very many cases which arise from purely accidental causes, such as blows, fractures, wounds, and sores. Thus a horse may be lame from a blow on the outside of the leg, or from a girth-gall, or from undue pressure of a saddle on the withers or on some other part, or from cracked heels, or other such causes. The majority of these causes are, however, apparent at first sight.

396. Sprains.—Closely connected with lameness, and in many instances the cause of it, sprains may be defined as injuries of the ligaments and adjacent structures of a joint; or of a single tendon, the result of overextension. Oftentimes severe lameness may arise from even moderate exercise of ligaments and muscles, and their being presently exposed to take cold, especially in damp and wet weather. This disorder partakes of the nature of rheumatism, which see.

A sprain may vary in severity and consequences, from a slight strain upon these structures, requiring little or no treatment, up to a fatal or irremediable lesion. Local pain and swelling, with lameness or inability to move, and perhaps some degree of feverish excitement, are the chief general symptoms. The following are the principal individual accidents of this kind:

397. Sprain of the Neck.—This occurs when a horse falls upon his head, as in hunting. There may be displacement of bones with twisting of the head and neck; or concussion or laceration of the spinal cord, attended or followed by hopeless paralysis; or simple sprain of the tendinous and ligamentous structures.

398. Sprain of the Back occurs when a horse slips in the field, or on ice, and attempts to recover himself; or when the hind feet slip backwards, as in jumping. Severe injuries in this quarter may involve important parts and be beyond the reach of art; or the sprain may not be observable till the animal has rested.

399. Sprain of the Shoulder occurs from a slip or fall, and is characterized by reluctance to move the limb, extension of the leg forward, dragging the toe along the ground and slightly swinging it round when walking, with local tenderness under pressure, and usually with some heat and swelling. When the lame leg is raised well up, and pulled out in front of the horse in a straight line, it is evident that more or less pain is caused.

400. Sprain of the Hip is known by lameness, difficulty in moving the leg forwards, and local heat, tenderness, and swelling.

401. Sprain of the Stifle is known by dragging of the leg, and the same local symptoms as the last. The patella—or bone in front of the stifle joint—may be dislocated, in which case the leg is dragged along, stiff and immovable. Drawing the leg forcibly forwards and pressing the bone into its place, will remedy this displacement. Spasm, or cramp of the leg, gives rise to similar symptoms; it comes and goes suddenly.

402. **Curb** is an enlargement at the back of the hock, about three or four inches below the point of the hock, and consists of sprain, followed by swelling and thickening of the ligament which binds the os calcis and metatarsal bones together. It is seen at a glance, by looking at the hock from the side. A horse galloping over stiff ground or put to a sudden spring, as in a start or jump, may "throw out" a curb. Young horses are especially the subjects of it. Horses are called *cow-hocked* or *curby-hocked*, when the joint is malformed in such a manner as to render them more than ordinarily liable to curb, from the ligament being kept constantly on the stretch. A horse with curb is unsound, but a curby-hocked horse, not lame at the time, is legally sound. A horse that throws out a curb even within an hour after sale cannot be returned to the vendor.*

The treatment of curb is the same as that required for any other sprain. The lameness usually subsides as soon as the inflammation is reduced. The strain of the ligament will be lessened by the application of a high-heeled shoe.

Strange as it may seem, the patient, if an aged horse, may generally be put to work again in from ten days to three weeks. But when the sprain occurs in a young horse, whose bones and ligaments are not yet fully grown and developed, rest for a lengthened period is always needed. Nature must be allowed time to strengthen and develop those structures, which the occurrence of a sprain, such as a curb, has shown not to be equal to what has been required of them. Unless time is given, the ailment will probably recur as soon as the horse is again put to work.

403. **Sprain of the Back Tendons** is a frequent accident to the fore leg; it is attended with sudden lameness at the time of the injury, or the lameness is perceptible only after the horse has rested. There are pain, heat, and swelling in some part of the tendon, between the pastern and the knee. The horse rests his leg on the toe, and is afraid to put the foot down flat. In bad or neglected cases, the condition known as thickening of the hock sinews remains.

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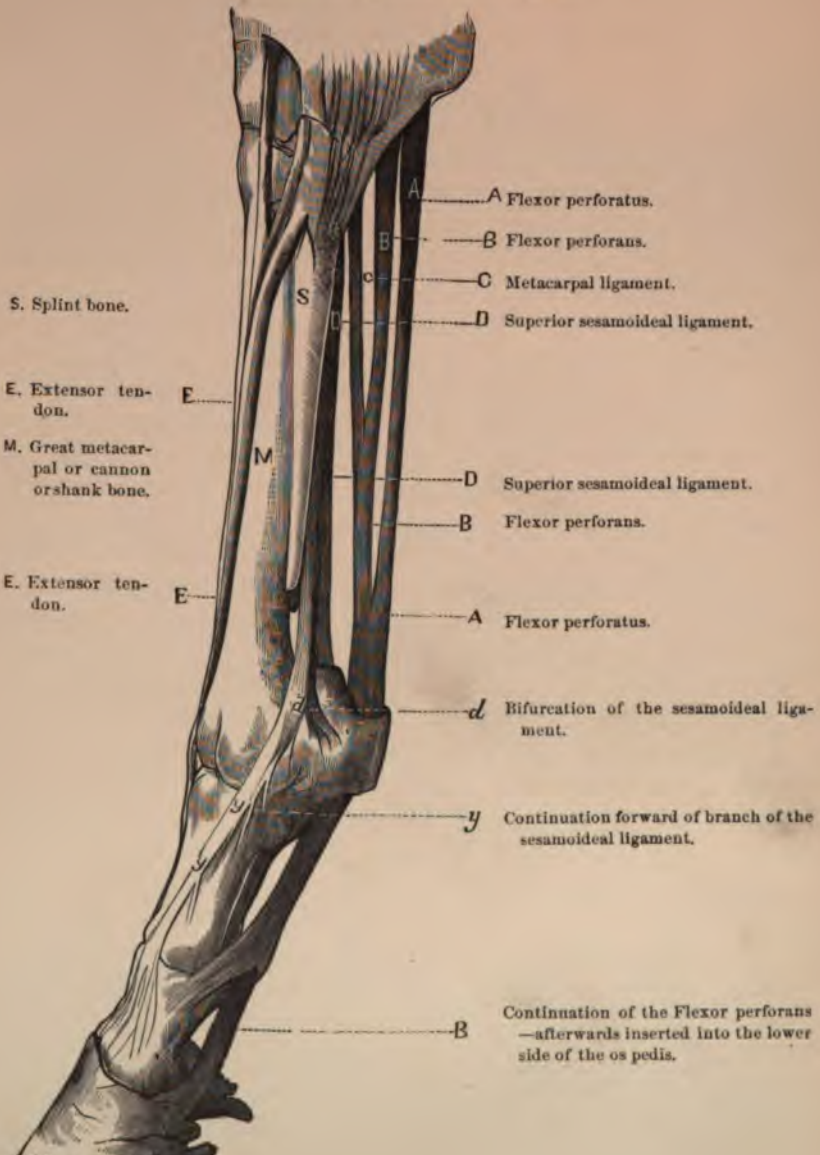
* Dr. J. Moore.

PLATE XVI.

Tendons and Ligaments of the Fore-Leg.


A Flexor perforatus.
B Flexor perforans.
C Metacarpal ligament.
S. Splint bone.
D Superior sesamoideal ligament.
E. Extensor tendon.
E
M. Great metacarpal or cannon or shank bone.
M
S
D Superior sesamoideal ligament.
B Flexor perforans.
E. Extensor tendon.
E
A Flexor perforatus.
d Bifurcation of the sesamoideal ligament.
y Continuation forward of branch of the sesamoideal ligament.
B Continuation of the Flexor perforans—afterwards inserted into the lower side of the os pedis.

404. Broken Down expresses rupture of the suspensory ligament and of the perforating flexor of the foot, a serious accident, which occurs suddenly to one leg, rarely to both, when the horse is galloping at full speed. He stops like a shot, or falls down—hence the name—and we find him resting on the fetlock, with the toe turned up and the sole of the foot forwards.

405. Sprains of the Hock.—Whilst in the fore leg the seat of sprain is usually in the tendons or ligaments between the knee and the fetlock, in the hind leg it is usually in the hock. From the very severe duties which devolve on the hock, we cannot be much surprised that it should be pretty frequently the seat of sprain. See Plate.

The seat of sprain in the hock is usually in the *ligaments,* which bind together the various bones of the true and subsidiary joints of the structure. These ligaments, as we might expect in a structure combining so many bones, are numerous. Any one or more may be sprained; or any portion of any of the ligaments may be affected.

The *tendons,* which commence at the end of the large muscles of the hind quarters and pass over the hock, are seldom sprained, though such an accident may occur.

The particular part which is sprained is indicated by heat and swelling, and to that part the remedies recommended for sprains must, according to the degree and circumstances of each case, be applied.

Very considerable swelling frequently accompanies sprains of the ligaments of the hock; but in all such cases the greater part of the swelling is always due to irritation of the various bursæ of the different parts of the structure rather than to the inflammation of the sprained ligament itself. These bursal enlargements are, however, in most cases only temporary, and yield to the same treatment as that employed to reduce the inflammation which accompanies the sprain.

406. Capped Hock.—Capped hock may be simply a serous effusion under the skin at the point of the hock; or the above may be accompanied by thickening of the integuments and inflammation of the bursa and by deposit of coagulable lymph.

The injury is usually caused by kicking in the stable or in harness. Some horses, however, contrive to injure themselves in the act of lying down or getting up.

In rare cases the enlargement may arise from rupture of the lateral attachment of the perforatus tendon at the apex of the os calcis. This injury will be recognized by a flattened appearance of the point of the hock when the limb is in a state of rest, which, however, disappears when the hock is flexed.

407. Sprain of the Ligaments of the Femur.—Sprains of the ligaments of the femur occur occasionally from any sudden violent exertion, or from slipping up in the stable.

When the injury occurs at the upper end, where the femur articulates with the acetabulum, there is no external sign, for the parts are deep-seated, and the existence of a sprain can only be surmised by the animal straddling and slightly dragging the leg. In such cases rest is the only treatment, for no external topical remedies will reach the parts affected.

At the other or lower end the ligaments, which really appertain to the femur, are seldom sprained. The external signs, when an injury does occur, are heat, swelling, and tenderness in the part; and the treatment is the same as that which has been already recommended for sprains. Rest, however, in this, as in other cases, is the great essential.

408. Sprain of the Ligaments of, and Displacement of the Patella.—Sprain of the ligaments, when the patella is not displaced, is indicated by swelling and heat accompanied with tenderness. In action, the horse carries his leg round instead of raising it properly. The treatment is that usual for sprains.

Displacement of the patella is indicated by the foot being flexed back on the pastern bone, by the hock being straightened, and by inability to advance the leg. If any attempt is made to compel the animal to do so, the pain will be excruciating. The displacement is generally to the outer, and not to the inner side.

Dislocation is most apt to occur in young horses, whose tendons and ligaments have not yet acquired their full strength. It is also sometimes occasioned by undue uprightness of the femur, on account of which the patella slips over the outer condyle of the femur.

If pushed back, the patella will often slip again into its place. If it does not do so, a rope must be secured round the pastern, and the leg must then be drawn forward by one assistant, whilst another presses on the outer and upper part of the patella, and pushes it in an inward and forward direction. See Plates VI and VII.

Its replacement will be indicated by a sudden snap. The horse must be restrained from lying down for twenty-four or perhaps forty-eight hours. It will sometimes be found, that, as soon as the hand is removed after replacing the bone, it slips out again. When such is the case, the operator should continue his pressure on the part for an hour or longer.

When the patella has once been displaced, there is a tendency for the accident to recur again and again. In such cases it will be necessary to blister over the part, or even to apply actual cautery. The effusion and thickening thus produced will exercise, as it were, persistent pressure on the part. See "Luxation of Patella," No. 389.

409. Sprains of the Fetlock Joint.—The injury is much the same as that which occurs in the similar joint in the fore leg, and the causes are usually the same. It may, however, arise from repeated sprains of the flexor tendons, which pass over the joint.

Knuckling over behind, as distinguished from sprain of the joint, is most frequently caused by spavin, or some other such cause, which interferes with the due flexion of the hock.

410. Sprains of the Loins.—This injury consists of sprains of the ligaments connecting the dorsal and lumbar vertebræ, or it may be sprain of the psoæ muscles.

Horses so affected roll in their hind quarters and have not proper control over the muscles. The injury generally occurs very suddenly, and is the result of some violent overexertion. The treatment is long rest and repeated blisters. Adhesive plasters, commonly called charges, have been found beneficial. But the homœopathic remedies indicated in the following section will be far more effectual.

The chance of recovery is very uncertain. If the injury is at all severe, the better plan is to destroy the animal. If the injury is very slight, the animal may move pretty well in a straight direction; but the injury will be detected when the horse is backed or turned round. This trial should never be omitted in the examination of a horse as to soundness.

411. Treatment of Lameness, Sprains, and Strains.—The same general principles govern the treatment of these various and yet not dissimilar forms of disease. The same remedies also are applicable, with few exceptions, to them all. But the *local treatment*, in which homœopathy here so much excels the ordinary method, requires that the seat of the lesion, whether of joint, or tendon, or muscle, or ligament, be ascertained within tolerable accuracy. And they require absolute rest, at least until the pain and swelling have subsided, and the lameness itself becomes less obvious. Even then work is out of the question, gentle exercise alone being advisable. In this respect great care and judgment are required, and it is always best to be on the safe side, and keep the patient quiet too long, rather than not long enough.

Arnica.—In the first stage of sprains, give *Arnica* in ten-drop doses every four or six hours, according to the severity of the injury, increasing the interval between the doses as the improvement appears. *Arnica* lotion (Arnica mother tincture one part, soft water fifteen parts) should be well rubbed into the injured part three times a day. In sprains of the leg, a bandage wet with the lotion should be wrapped around. This may be moistened at intervals as it becomes dry. But it should be observed that the *intermittent* and not the continuous action of the external application is most beneficial.

Rhus tox. should be substituted when some swelling still remains in cases of lameness (from sprains or strains) after the free use of Arnica as above directed. A lotion of Rhus, prepared as ordered for Arnica lotion, should be similarly well rubbed in. This remedy is no doubt much more efficacious than Arnica in all cases of sprain or strain, whether of ligaments, tendons, or muscles. And it will be still more indicated when the original injury is aggravated by exposure to damp and wet weather. Internally, give five-drop doses of Rhus once in three or four hours, in connection with its external application; this latter should be applied warm in cold weather, and cold in hot weather. But the warm lotions and fomentations are more homœopathic to, and so more efficient in relieving inflammations, than if they were applied cold.

Rhus tox. cures many cases of lameness whose cause and exact seat are alike unknown. We remember to have seen this well illustrated in a horse constantly going lame and equally disposed to *kick*. A few doses of Rhus cured the lameness, and the disposition to kick disappeared at the same time.

The following, from a recent periodical, illustrates the action of this remedy: Sprain of the hock joint cured by Rhus.—Dr. Moore relates an interesting case:* "The mare seems well, except that she is very lame in the right hind leg; the hock, at its front and inner aspect, on the seat of bog-spavin, and on that of thorough-pin, is considerably swelled, hot, and tender. The hair has been removed by some stimulating application, which has done no good. To have ten drops of Rhus tox., 1st dilution, thrice daily, and the affected parts to be well rubbed night and morning with a mixture of tincture of Rhus one ounce and of water fifteen ounces. In one week's time under this treatment the animal was perfectly recovered, and remained well."

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* British Hom. Journal, Oct., 1858, p. 625.

Mercurius corrosivus.—In chronic thickening of tendons, or sheaths of tendons, or of structures around a joint, Dr. Moore advises to have recourse to Merc. corros., applied externally in form of lotion, made by dissolving sixty grains of the drug in one pint of hot wâter; the same medicine, in the sixth dilution, should be also given internally in five-drop doses three times a day.

Ferrum muriaticum has been found especially useful in sprains of the shoulder joint, resulting from great exertions, false steps, or external violence. Even cases of this kind of long standing have been greatly benefited by this remedy in the sixth decimal dynamization.

Aconite may prove useful in inflammations resulting from a sprain.

Bryonia will be found useful in affections of the ligaments caused by exposure to dry cold. (Wet cold, Rhus tox.)

Veratrum has been found useful in lameness of the shoulder.

Symphytum will be needed where there is rupture of tissues, injuries of the periosteum or membrane covering the bones, and especially where there are fractures of the bones themselves.

Cocculus.—Recommended in strain of the haunch.

Nux vomica.—Strain in the haunch of calves.

Ledum, Bryonia, Cocculus, Pulsatilla, Nux v., and **Rhus** are recommended in strain of the loins.

Conium will prove an important remedy for lesions consisting of strain and bruise together, especially in old cases, and after Arnica has done all the good it can in the case.

Consult the Materia Medica for further indications for these remedies in the various forms of lameness.

The following cases, reported by Dr. Moore, will show his method of treatment and the operation of the homœopathic remedies:

Sprain of the Flexor Tendon.—On May 5th, 1860, I visited a carriage-horse belonging to B. Green, Esq. The animal is a fine-topped horse, but rather defective in his fore legs. A few days ago he became lame of the fore right leg, and was sent to a veterinary surgeon, who recommended firing and blistering, and rest for three months. The owner objected to such severe measures, and placed his horse under my care.

Symptoms.—Lameness of the right fore leg; the flexor tendon is swollen, hot, and painful, just above the fetlock joint; quite well otherwise.

lame. The left hock was very much swollen all around, and projecting on each side; the seat of "thorough-pin," and also the seat of bog-spavin, are both very hot and painful on pressure; otherwise the horse is well.

Treatment.—The hock to be well fomented three times a day, and immediately afterwards to be well rubbed with *Ruta lotion*, and ten drops of the first dilution of Ruta to be administered internally.

Under this treatment the horse became sound in ten days, and went to work, although the hock was still considerably enlarged; but by persevering in the above treatment it became quite right in a few weeks.

412. Cuts, Abrasions, and Lacerated Wounds.—Whenever there is severe abrasion of the skin, or the flesh has been lacerated, particularly also, if great discharge of blood takes place, Calendula appears as the unfailing remedy. Such are the frequent cases occasioned by the fall of a horse. Broken knees are amongst them. One important precaution in the treatment of such wounds, consists in the thorough removal of every particle of extraneous substance which may have been insinuated into the wound, and in washing the wound copiously with cold water. After which, the tincture of Calendula will in many cases obviate the blemish which would otherwise ensue.

Used as a lotion, one part of the mother tincture to fifteen of water.

413. Stings of Insects.—Tincture of Camphor, diluted with from six to twenty times its volume of Spirit of Wine, or tincture of Urtica dioica, diluted with from four to ten times its volume of water. The *former*, when the sting has been followed by little or no swelling, or other external manifestation; the *latter*, when more or less swelling has ensued, and especially when the adjacent parts are characterized by evident tenderness, the animal shrinking from contact (the affection being purely local).

The lotion of tincture of Camphor must only be made by dilution with spirit, as just directed; of tincture of Urtica, by dilution with water, as in the case of Rhus.

Camphor is available either as a preventive agent, or immediately after the occurrence of the accident (in most cases).

414. Rheumatism.—*In Horses:* Rheumatism is inflammation of a peculiar shifting type, usually but not exclusively affecting tissues of low organization. It may be chronic, or it may be acute. The acute attack is usually accompanied by febrile symptoms.

Viewed in its more general aspect, as distinguished from the cause of any particular attack, this disease may be said to be a result of a low or impaired state of vitality. Hence its usual seat is in tissues of low organization.

The parts usually affected are the white fibrous tissue covering the muscles, the capsules of joints, the tendons and their sheaths, and ligaments. Occasionally the valves of the heart suffer from rheumatism, not indeed directly, but secondarily from deposit of fibrin on them, which impairs their functions; and in some cases the coats of the blood-vessels are affected, and more rarely parts of higher organization.

The chief peculiarities of the disease are the suddenness of its attacks and a very remarkable tendency to shift from one part to another.

Structures which have been once affected are very liable to recurrence of the disease, and after a time it may become chronic in such parts. But though it may be chronic, variations in degree will be felt from time to time, according to weather, health, and other changing circumstances.

Rheumatism is often caused by neglect. It is very readily brought on by exposure to wet and cold, by insufficient diet, by bad stable management, by neglect, and by all other such causes as lower the general health Rheumátism is also a frequent sequel of any debilitating disease, especially of chest affections and influenza. It is said to be hereditary, but this point is very doubtful.

By some it has been thought that rheumatism is dependent on an excess of lactic acid in the blood, but even if true, this supposition is of no practical import.

Symptoms.—A sudden and at first unaccountable stiffness in some part or other is usually the earliest sign. The absence of any external cause sufficient to account for the stiffness or lameness will lead us in such cases to suspect rheumatism.

This suspicion, if correct, will be confirmed in a few days, either by the sudden disappearance of the attack, or by increase in the symptoms, or by its shifting to some other part. For example, if the attack supervenes on influenza, one fore leg may be found suddenly much inflamed and sore to the touch from the knee downwards along the back tendons, and the attack will probably be accompanied by febrile symptoms and short, quick breathing. Under treatment the ailment will probably get better, but suddenly the other fore leg or perhaps a hind leg may be similarly affected.

If the attack be severe, or if it be continued, the parts affected will soon become hot and swollen. When a part has been frequently attacked, a chronic swelling generally becomes apparent.

When rheumatism arises from exposure to cold or wet, it generally affects the loins or shoulders.

For any present attack the best treatment is friction to the part affected, which should afterwards be wrapped in flannel. Hot fomentations are also beneficial, but great care must be taken to avoid a chill by applying warm flannel bandages as soon as the fomentation is discontinued. In good truth, however, in this as in many other diseases prevention is better than cure. Horses in really well-managed stables do not often suffer from rheumatism.

In animals which, either from previous attacks or constitutionally, are predisposed to this disease, the greatest care, in addition to maintaining the system by good feeding, should be taken to have them dried and cleaned immediately after their return from work. The evil effects of allowing horses to stand and get chilled after exercise cannot be too constantly borne in mind.

Sudden lameness, especially with heat, swelling, and tenderness of the affected part, will usually indicate a rheumatic attack when no other cause can be discovered. Especially will this conclusion be correct if the joints are the parts disordered. And again, in animals which have once or oftener been subject to this complaint, there never need be any doubt as to its character when it appears again.

Chronic rheumatism is merely the continuance in a less severe form of what has already been described as acute rheumatism; and, like the acute form, chronic rheumatism changes its location, appearing one day in one joint or limb, another day in another part. The repeated attacks of rheumatism, which are the precursors of the chronic form, are best obviated by the appropriate homœopathic treatment.

Lumbago is rheumatism in the loins or lumbar fascia; horses so affected are said to be "loin-bound."

Pleurodynia is the name given to rheumatism affecting the muscles between the ribs, and also the fibrous tissue which lines the interior or the chest; the name itself literally means pain in the side.

Chest founder,[*] "external pleurisy,"[†] or "shoulder-tied," is the name applied to rheumatism involving the fibrous tissues about the shoulder. "*Flying lameness*" is a name frequently bestowed upon the lameness resulting from sudden metastasis of the rheumatic affection from one part to another.

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[*] *Founder*, as well explained by Blaine, from the foundering headlong or tumbling gait it produces, has been applied to diseases totally opposite, as rheumatism in the shoulders, and phlegmonous inflammation of the laminæ of the coffin-bone (Foot Founder; see No. 358) It is true that a distinction was intended by the terms *chest founder* and *body founder*, for the former, and *foot founder* for the latter; but the terms are often jumbled together in old books of farriery, and a corresponding confusion prevails in common conversation.

[†] *External pleurisy* (pleurodynia) as a name for acute rheumatism, was derived from its being supposed to be seated in the intercostal muscles and at the same time

In Cattle.—Rheumatism occurs more frequently in oxen, cows, and dogs, than it does in horses.

Chine felon (*lumbago*), is the name formerly given to rheumatism of the back in cows (corresponding to "loin-bound" in horses), and joint felon, where it attacked the joints.

Kennel lameness is the popular designation of the rheumatic disorder as it affects dogs. In sporting and house dogs the presence of rheumatism is manifested by the way in which the animal limps with one paw, which he trails along, or holds raised up as he walks; uttering complaints and howlings when he lays it down on the ground.

The nature and symptoms of the disease in these different animals are, generally speaking, quite similar. But in cows it becomes a much more serious affection, and in its acute and chronic forms is thus described by Gamgee: It is commonly observed in the cow in the chronic form, though it occasionally assumes an acute type, and may prove fatal in the course of a few days.

Acute rheumatism is ushered in by general uneasiness, loss of appetite, dryness of skin, constipation, and apparent rigidity of the joints of the body. One of the joints more particularly swells, becomes stiff and painful. In the course of the disease, other joints become affected, the acute symptoms usually subsiding in the part first implicated. The sudden transition of the disease from one part to another, an occurrence which is technically termed metastasis, is characteristic of acute rheumatism, in which there is a great tendency for the serous membranes in large cavities to become inflamed. The pleura, but more particularly the serous membranes covering the inside and outside of the heart, become affected, and it is usually from heart disease that a rheumatic animal is disabled or killed.

In chronic rheumatism one of the joints becomes chiefly affected, and is the seat of structural changes. This is seen in young animals not unfrequently, but also in milk cows. Sometimes a tendency to scrofula encourages a deposit of lymph, which has a tendency to invade the bone and remain unorganized, sometimes softening so that abscesses form. The knee joint is most frequently affected with this form of disease, and may assume enormous dimensions.

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to involve also the internal organs of the chest. But this, if formerly true, as evidenced by an accompanying cough, does not now appear ever to be the case.

Milch cows generally lose their milk, as they come under the influence of rheumatic fever.

415. Treatment.—*Aconite* will be indicated in the acute form of rheumatism by its usual symptoms: fever; local inflammation, swelling, and tenderness, which may shift from one part to another; restlessness; shivering and chilliness at the first, and especially when there is danger of the disorder attacking the heart. In this latter case full (ten-drop) doses should be given every hour, till the emergency is passed. In ordinary cases the

Dose.—May be five drops (to ten drops if the symptoms are urgent) once in two or three hours.

Bryonia.—Acute rheumatism; especially of the legs, shoulder, and side (pleurodynia); full and frequent pulse; swelling not confined to the joints; loss of appetite; thirst, constipation, stools dry, respiration short, urine high-colored, great reluctance to move, and evident increase of the pain from the least motion.

Bryonia is one of the oftenest indicated remedies in rheumatism, and will be especially suitable when the disease arises from exposure to cold dry air, or winds.

Dose.—From five to eight drops in a little water, every two or three hours, according to the size of the patient and severity of the symptoms.

Rhus tox.—Rheumatism arising from exposure to cold and wet; stiffness and difficulty of moving at first, the lameness and stiffness apparently less after continued exertion; restlessness, can't keep still; loss of muscular power (paralysis) of the legs; rheumatism of the muscles of the back. The disorder results from overexertion and exposure to the rain when fatigued; a very common cause, and for which Rhus is almost as specific as any medicine can be for any affection. Pains worse when at rest; better on motion.

Dose.—Ten drops for horses and cattle, smaller doses for lesser animals; repeated once in three or four hours; in chronic rheumatism, night and morning only.

Cimicifuga racemosa.—An invaluable remedy in pleurodynia of the right side of the chest; pains worse on motion; articular rheumatism, with much swelling and heat of the affected parts.

Dose.—Five drops every two or three hours for horses and cattle, two or three drops for smaller animals.

Belladonna will be required when the affected parts are extremely tender to the touch and painful when moved, causing lameness; swelling of the joints, which are hot and tender; throbbing of the arteries; high fever, worse at night.

Dose.—Three to eight drops once in two hours, in a little water; less often when better.

Gelseminum.—A new and invaluable remedy in rheumatism which *aggravates at night*, with terrible pain; loss of power of using the affected limb; the swelling changes from one joint to another; the affected parts are tender to the touch; *rheumatism of the legs, with coldness and paralytic weakness of the affected parts*, without much general fever.

Dose.—Ten drops four times a day.

Phytolacca decandra. — Chronic rheumatism, worse in damp weather; enlargement of the glands, with or without swelling of the affected parts; periosteal rheumatism, involving the bones; aggravation at night. A powerful medicine, with which it is probable the Indians made more real cures than with all the rest of their "medicine" together.

Dose.—Ten drops three times a day.

Arsenicum.—Pale, cold swelling of the joints; debility; *perspiration;* alternate chilliness and heat; restlessness of the affected limb; complication with, or metastasis to, the heart; worse from drinking cold water, relieved by external warmth.

Dose.—Six drops once in four hours.

Nux vomica.—Very often indicated in rheumatic affections complicated with disordered or weak stomach* and constipation; paralytic weakness of the muscles of the legs; similar to Rhus in this respect, but opposite to this remedy in not being relieved but rather aggravated by movement, and in the tendency of Nux to constipation.

Silicea and **Hepar s. c.** should be studied for those cases, if any such occur under homœopathic treatment, in which *"joint-felon"* (abscess) forms in the joint, and carious disorganization attacks the bone.

Dulcamara, Ledum p., Calcarea carbonica, Sulphur, Causticum, Chamomilla (which restores the secretion of milk after the other ailments have been removed) and **Nitric acid** may be consulted in the Materia Medica.

Diet.—The patients must be made comfortable as to cold; secluded from exposure to the weather; allowed perfect quiet or voluntary movement as their sufferings require, and given simple, nourishing, but, as in fever, a very light diet. Bran mashes for horses and cattle; gruel, but no meat, for dogs.

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* Weakness and excessive sensibility of the stomach are very constant attendants on rheumatism in man and beast. The least imprudence in diet is often capable of producing a relapse when convalescence has already set in, and will always aggravate existing symptoms.

416. **Myalgia.**—In this disorder the muscles are the seat of pain. Horses and dogs, more frequently than other animals, are affected with it after racing, hunting, or any other severe or long-continued exertion. *Soreness and stiffness* express the same state in man. Usually, the pulse and breathing are little, if at all, disturbed, except after exertion, or when there is considerable pain. When the muscles of the chest and shoulder are principally affected, the disease resembles rheumatic pleurodynia, or spraining the shoulder, in which latter case the horse walks down hill with great pain and difficulty, but up hill with comparative ease. Pressure of the affected muscles shows that there is great tenderness. Myalgia may be confounded with chronic rheumatism, from which, however, it chiefly differs in not attacking fibrous structures, or those entering into the formation of joints; in usually following severe exertion, or from a horse being thus overweighted, and in the shifting character of rheumatism being absent.

417. **Treatment.**—*Arnica*, ten drops every four hours, is advised as the best remedy by Dr. Moore, to whom we are indebted for the foregoing distinctive account of a severe affection and one not noticed by other veterinarian authorities. He gives the following illustration of what he considers myalgia, and of which the cure was effected by a remedy that we cannot but deem much more appropriate to the symptoms than Arnica could be.

Case.—Back arched and as stiff and immovable as if the vertebræ were made of one piece; difficulty of moving both legs, especially the right one; evident pain attending motion; soreness of the muscles; lies down much; when crouching, preparatory to lying on the ground, considerable hesitation is manifested, arising, no doubt, from the pain and difficulty attending the muscular movements; instead of lying down slowly and gently, he drops to the ground; he rises with great difficulty; the appetite is tolerably good; the pulse 44, and the breathing 20 per minute.

He got ten-drop doses of Mercurius vivus, 5th, and the same of Rhus tox., 1st, in alternation, six hours apart; his loins and shoulders were rubbed with a Rhus lotion, and in three days he was well.

Consult in Materia Medica *Cimicifuga* and *Gelseminum.*

CHAPTER XIII.

WOUNDS—ABSCESSES—ULCERS.

418. Wounds of the Flesh.—A flesh wound is a solution of continuity in the soft parts, suddenly produced by violence.

Classes of Flesh Wounds.—Flesh wounds may be divided into six classes, namely, 1st, Incised; 2d, Lacerated; 3d, Punctured; 4th, Contused; 5th, Poisoned; and 6th, Gunshot.

Modes of Healing.—Wounds are healed either, first, by direct union, or secondly, by adhesion, otherwise called the first intention, or thirdly, by scabbing, or fourthly, by granulations.

Direct union, or the direct and immediate growing together of the opposite surfaces is the most favorable mode of healing; and therefore it should, if possible, be brought about. It is, however, only obtainable in incised wounds, and even then only under very favorable circumstances.

It is necessary, that we should be able to check the bleeding, to remove all foreign bodies, to bring the divided parts together in their natural position, and further to retain them in union. There must also be *entire absence of inflammation.* The surface of the wound must be excluded from the air, and cold must be applied to prevent the setting in of inflammation. If these conditions are attainable, direct or immediate union may probably be procured, if in addition the constitution of the animal be good.

The second mode of union is by adhesion, commonly called the first intention. It consists in the effusion of lymph between the opposed surfaces. In this mode there is *slight* inflammation of the parts, but not of a destructive character. In direct union the absence of *all* inflammation is necessary. In other respects, the same conditions are required as for direct union, namely, absence of bleeding and of foreign bodies, direct apposition of the sides of the wound, and exclusion of the air. Healing by adhesion is the most common mode of union.

The third mode of union is by scabbing. In it the wound is excluded from the air by some substance, such as hair, blood, &c., under cover of which the union takes place. This mode of union is sometimes brought about artificially by covering the wound with collodion, &c. The absence of inflammation is necessary.

The fourth mode of union is by granulations. This is otherwise termed union by second intention. It takes place whenever any of the conditions necessary for direct union or for adhesion are not fulfilled.

Union by second intention consists in the effusion of lymph from the overloaded vessels of the part under the influence of active, but not excessive inflammation. The lymph becomes vascular, and from it granulations are formed. All lacerated and some incised wounds are healed by this mode. Though simple incised wounds may be closed and healed in favorable cases by direct union or by adhesion, yet loss of structure cannot be repaired or cavities filled up except by material effused from the blood.

The lymph, spoken of in the preceding paragraph, in a short time after its exudation coagulates. Red streaks soon appear in it, which are incipient bloodvessels formed from and continuous with the vessels of the adjacent parts. In this way the lymph is formed into a definite structure and becomes a living constituent part of the body. In it there next appear little eminences, each containing a cell. These eminences are called granulations. They secrete healthy pus. The upper layers gradually become converted into epithelium, whilst the lower layers are converted into connective tissue. The lymph thus organized always partakes more or less of the structure into which it is exuded. The deposition of lymph will continue, under favorable circumstances, until the chasm is filled up to a level with or above the surrounding parts.

Good lymph, it will be remembered, is only secreted in the moderate or "active" stage of inflammation. It is not secreted in the acute or chronic stages. In most injuries the degree of inflammation is at first excessive. Hence in the treatment of wounds our first object generally is to reduce the inflammation by means of cold applications or fomentations, and especially by specific medicinal applications such as Arnica, and Calendula lotions. When this has been done, the probability is that good lymph will be exuded. Nature, not art, conducts the healing process. All that man can do, is to get the part into a state favorable for the operations of nature; and if the patient is healthy and other circumstances connected with the particular case are favorable, she will soon complete the cure.

In some cases, however, it happens, and especially where the constitution is weak and unhealthy, or where the part injured is of low organization, that the inflammatory process becomes torpid, before sufficient lymph has been exuded. It may then become necessary to stimulate the part to renewed activity by the application of irritants.

On the other hand, if the local inflammation continues for too great a time, the lymph will soften into pus.

In a wound of considerable extent, several of the above modes of union may often be seen in operation in different parts at the same time, as, for instance, the first, second, and fourth.

There is a greater disposition in the horse than in man to suppurative action. Hence wounds of any extent seldom heal completely in the horse by direct union or by adhesion. These modes should, however, be sought for and obtained as far as possible in each case, with the view of reducing the size of the part requiring to be filled up by granulations.

Such are the various modes of healing wounds, and like all nature's processes they are simple enough. In practice, however, innumerable modifications occur, arising from the nature of the wound, the degree and seat of the injury, the presence or otherwise of foreign bodies in the injured part, the amount of hemorrhage, the health of the patient, and degree of irritability peculiar to his system. In short, no two cases are exactly alike.

Details connected with these varying circumstances will now demand our attention.

Cleansing of Wounds.—All foreign bodies in a wound should at once be removed, as far as possible, by allowing lukewarm water to fall in a stream over it from the mouth of a vessel. Or a sponge or a piece of fine tow may be pressed on some part above, from whence the water may gently trickle over the wound; but the abraded surface itself should never be touched. Any large particles of gravel or dirt may be carefully removed by the forceps. It is, however, a mistake to irritate a wound by overanxiety to cleanse it thoroughly. Nature will by her own processes remove with less irritation than man can do, any foreign matters which will not come away by the simple means recommended above.

419. Stoppage of Hemorrhage.—The cleansing of a wound is, however, of less importance in the first instance than the controlling of the hemorrhage. For this purpose, in ordinary cases, the application of cold styptics or pressure are generally sufficient. If, however, the hemorrhage be arterial, a ligature or acupressure will probably be necessary. The latter is preferable, as it causes less suppuration.

The best *styptic* for ordinary wounds consists of pledgets of lint dipped in dilute tincture of Millefolium—one part of the mother or strong tincture to four or five of water, giving internally at the same time from five- to ten-drop doses of the third dilution once in fifteen (or thirty) minutes till the flow of blood abates.

But where the wounded vessel is an artery, and not so situated as to be obstructed by external pressure, that is, where it is not situated directly over a bone, against which pressure can be made, recourse must be had to what is called acupressure.

Acupressure is made by inserting needles either above or beneath the trunk of the wounded artery, between the wound and the heart, in such a manner as, by pinning the tissues together as it were, to cause a pressure against the artery either from below up, or from above down; by thus obstructing the channel of the artery a coagulum is formed, and the hemorrhage quickly ceases.

420. Dressing for Wounds capable of being Healed by Direct Union.—The best dressing for wounds which comply with the conditions required for direct union, is Carbolic acid paste spread on tinfoil. It effectually excludes the air, and is supposed to destroy those atmospheric germs which hinder the healing process.

Carbolic acid paste is best made by rubbing a few drops of the liquid acid up with a sufficient quantity of pulverized chalk, and adding glycerin to produce and maintain softness.

Carbolic acid lotion in many cases would be preferable; and it is equally efficacious as a disinfectant, in excluding the air, and in preventing flies from disturbing the wound and laying their little eggs in its vicinity.

Scarcely any suppuration takes place in wounds when this disinfectant is employed under the above favorable circumstances. Hence direct union, or at least union by adhesion, is likely to occur. The bandages which retain the dressing should not be removed for some days. The dressing of course must not be applied until the bleeding has ceased and the wound has been cleansed. It will be necessary to remove the hair round the part before the dressing is applied.

The method of dressing here given is the most recent and improved (allopathic) surgical treatment. The specific virtues and applications of the various homœopathic surgical appliances and constitutional medicines will be detailed at the close of this article.

Dressing for Wounds intended to be Healed by Adhesion.—For wounds capable of being healed by adhesion, lint steeped in blood or in Calendula lotion will be sufficient, and should be applied either constantly, or at intervals of one, two, or three hours.

Dressing for Wounds intended to be Healed by Granulations.—For wounds intended to be healed by granulations, there is no better dressing than lint steeped in Calendula (lotion) water. Care must be taken to keep the lint moist, and for this purpose it may be covered with oilskin or gutta-percha.

But it is neither necessary nor best to maintain the medicated application constantly upon the wounds of this or indeed of any other kind, except as before stated with reference to the (antiseptic) Carbolic acid lotion. Once in two or three hours is often enough in most cases for giving medicine internally; and the healthy reaction of the system may as well require intervals of rest from external as from internal medication. The air, however, must always be excluded.

All wounds healing by granulations must fill up gradually from the bottom. It must be remembered, that there is a greater tendency to union in the edges of the skin and in parts near the skin than in the deeper tissues. Hence all deep wounds require to be kept open, until we are assured that the healing process is fully completed from the lowest part. This object may generally be attained by inserting a piece of dry lint between the edges of the wound.

The formation of a slight scab over the exterior of a wound is useful in many cases as a protection against the irritating effects of the air and accidental abrasion; but no dense, firm, unyielding scab should be permitted to form or remain, because it will unduly check the natural exudation of the matter, which in such wounds always forms. The matter, if confined, will collect until at last it bursts out by some large irregular opening, or, if unable to obtain an exit, will burrow in the deep-seated tissues and cause extensive mischief.

421. Indolent Wounds.—If a wound, which is healing either by scabbing or by granulations, becomes indolent, and the healing process is slow and imperfect, it may be necessary to rouse the parts to more energetic action. If the wound is merely in the skin, the edges of it may be removed with the knife, and the cut surfaces brought into contact and kept together by sutures.

Indolence in the healing process is a sign of constitutional debility. Hence in addition to local measures the general health should be carefully attended to, and constitutional treatment, such as will be subsequently indicated, should be employed, to stimulate the vital energies in this direction. Every source of debility must be sought for and removed in the meantime.

422. Excessive Granulations.—In some indolent wounds and especially in those over the coronet, there is often a disposition to excessive and unhealthy granulations, otherwise called proud flesh. This disposition must be kept in check by the application of some styptic, such as sulphate of copper or zinc, nitrate of silver, or alum, and in some cases, where it can be conveniently applied, by pressure. When granulations form in masses, matter will often be found under them, which is apt to burrow in sinuses, unless an opening is made for it.

423. Sloughing.—Sloughing is *death of a part*, produced by disease or injury. The circulation is obstructed and the part undergoes decomposition. Sloughing is apt to take place whenever a part has been much lacerated or bruised. The slough may be superficial or deep. When the slough has separated, repair takes place by granulations. The extent of a slough depends on the nature of the injury and on its situation. The parts most liable to slough are those that have only a small supply of blood. Vascular parts are not so liable to take on this action.

424. Rest.—In all wounds it is an object of much importance to keep the part in a state of rest. In some parts a certain degree of motion cannot be avoided, but an endeavor should be made to lessen it as far as possible. For instance, if the jaw be injured, it is desirable to place the patient on sloppy diet, which will not require much mastication. In wounds of the leg advantage may be taken of particular kinds of shoes, such as those raised at the heels or at the toes, according to the circumstances of the particular case. In some cases the patient will require to be tied up to prevent his moving about, whilst in other cases a cradle will be needed to prevent his gnawing the wound with his teeth.

425. Sutures, Bandages, &c.—Sutures are useful in bringing together the edges of the skin in parts where there is but little flesh, such as on the forehead, the nose, and eyelids; but they do not answer in fleshy parts, because the weight of the flesh and the swelling arising from the attendant inflammation generally bursts them. In such cases the needful apposition of the parts is best promoted and maintained by bandages. Again, sutures are not advisable where the edges of the wound are much torn, or where there are foreign bodies lodged in it, because the inflammation and suppuration which ensues in such cases is aggravated by the confinement of the matter, and in the end the sutures generally break away.

Sutures are best applied by means of a curved needle. Interrupted sutures answer better than continuous, because the process of healing by direct union or by adhesion is seldom complete in the horse for reasons already mentioned, and hence the matter which forms needs frequent means of escape. The twisted suture, made by two needles and a skein of tow or silk twisted over them, answers very well in a small incised wound, such as that caused by bleeding in the neck.

In extensive wounds a flexible silver wire suture is often used in preference to silk, because it does not absorb the effused matters, and hence also is less likely to slough out. In extensive wounds, however, especially in fleshy parts, bandages answer better than sutures.

A bandage should be adjusted very evenly, and not so tight as to obstruct the circulation or to cause pain. When circumstances admit of it, the bandage should be applied above and below, but not over the wound. This arrangement will enable the dressing to be easily changed without the necessity of removing the bandage each time.

426. Cicatrix.—True skin, when once destroyed, is never reproduced. Its place is supplied by a cicatrix, which is formed of fibro-cellular tissue covered by epithelium. A cicatrix differs from true skin mainly in not containing sebaceous follicles or hair.

427. Constitutional Effects.—The constitutional effects of such wounds as it is worth our while to treat in the horse, are in general not very serious. Traumatic fever sometimes ensues, but usually subsides in a few days. Temporary debility may follow any excessive loss of blood from an incised wound, but nature soon repairs the loss.

Tetanus or lockjaw, which becomes the most serious of all the constitutional effects of wounds, has elsewhere been duly considered: see No. 239. And reference to this same complication, with the view of guarding against it, will be made under the subsequent title of "Punctured Wounds."

428. Treatment of Incised Wounds.—In favorable cases incised wounds may be healed by direct union. If any of the conditions necessary to that mode of union are wanting, it may probably be possible to obtain union by adhesion. In some cases it may be necessary to have recourse to union by scabbing or by granulations. The *Calendula lotion* will exert a favorable influence as far as any outward application can. *Staphysagria* and *Cicuta* are the medicines whose efficacy has been best proved in such cases. See schedule and symptoms of remedies for the various sorts of wounds, at the close of this section.

429. Treatment of Lacerated Wounds.—In lacerated wounds some of the conditions necessary for direct union are wanting. Some degree of inflammation is always present, and again the parts cannot be brought into perfect apposition. Healing by direct union is therefore out of the question. Under favorable circumstances we may perhaps obtain the conditions necessary for healing a portion of the wound by adhesion. Usually, however, these wounds require to be healed by the more tedious process of granulation.

Lacerated wounds seldom bleed much, even though some of the arteries may be divided, because the vessels are *torn*, and in consequence contract and retract within their sheaths; and again the torn filaments favor the formation of an external clot by entangling small particles of the fibrin of the blood.

The parts must be brought as nearly as possible into apposition. From the nature of the wound it is not probable that the edges can be made to meet. It is seldom advisable to cut off any portion of the skin, even though it may be detached. Isolated pieces of skin, which may be left in parts, should be permitted to remain. They may become points of connection, and so reduce the size of the cicatrix. True skin, it must be remembered, is never reproduced.

Fomentations and poultices will be needed to reduce the violent inflammation which usually sets in. Fomentations with *Calendula lotion* will go far to remove the violent inflammation, and often will render *poultices* unnecessary. But observe here, what was said in the previous paragraph concerning the continuous or interrupted application of external medication, that it is best not to have the application constant, but rather to foment the lacerated surfaces once in one, two, or three hours, as the severity of the symptoms may require, until a healing disposition becomes manifest. Then the parts should be protected, by oiled silk or even *Collodion* applied with a camel's-hair pencil, from evaporation of their own fluids, and from the irritating influence of the atmospheric air. Then nature will often do her own work of reparation better if undisturbed by the too frequent or constant interference and influence of wet applications of any kind. If the wound subsequently becomes unhealthy or indolent, or if excessive granulations appear, constitutional treatment must be resorted to. Sutures are seldom of much use or even available in these cases.

In those cases where from pain and irritation traumatic fever sets in, sedatives and a mild dose of physic will probably be needed. As a preventive, it is always advisable to lower the diet of the patient for a few days after the occurrence of the injury. Afterwards, a liberal diet is essential, or the powers of nature will not be able to carry on the process of repair. The chief danger to be apprehended in lacerated wounds is the occurrence of tetanus or lockjaw.

430. Treatment of Contused Wounds.—By contused wounds are meant injuries inflicted by bruising the skin and subcutaneous tissues without any absolute breach of the skin. Such wounds generally contain serum or a mixture of blood and serum under the skin. In the progress of any serious contused wound there are two distinct periods, namely, the separation of the slough produced by the contusion, and that of the repair of the chasm by granulations. If the parts around are much bruised, superficial slough may ensue to a considerable extent. Before healthy granulations can form, the wound must discharge itself of all dead matter. Minor contused wounds do not generally run to sloughing.

The great principle in the treatment of contused wounds is to render them of a simple character by giving to the confined matter and extravasated blood a free exit by making an incision at the lowest part. All contused wounds, however, do not require to be opened, because the effect of the fomentations and medicated lotions, which may be applied, is often sufficient to rouse the bloodvessels and absorbents to remove the effused fluids. In all contused wounds, whether great or small, there is always, it must be remembered, some destruction, though it may be very slight, of the subcutaneous tissues or muscles. The products resulting from such causes must be removed. If the powers of nature are not sufficient, their more speedy removal must be assisted by art.

As in lacerated wounds, the violent inflammation at first existing in the contused and neighboring parts must be reduced by general and topical measures before the healing process will commence.

During the healing process serum is very apt to collect in cavities in the wound. Though punctured, the sacs are apt to fill and refill, and sometimes there is a good deal of trouble in getting rid of them. They are best treated by being freely laid open, and injected with a diluted solution of zinc or copper, or a seton may be passed through them.

Arnica lotion, composed of one part mother tincture of Arnica to fifteen of soft water, will be found amply sufficient in all recent contusions, or contused wounds, in connection with ten-drop doses of the third decimal dilution of the same remedy once in three hours, for horses and other large animals; smaller doses in proportion for those less in size.

Conium maculatum, in similar doses of ten drops, repeated but twice a day, will be more suitable for old contusions, especially where the spine has been involved in the injury, and where glandular structures are implicated.

431. Treatment of Punctured Wounds.—Punctured wounds, if the puncture does not extend into a joint or through the sheath of a tendon, are best treated by being laid open and converted into ordinary incised wounds.

Unless this course is taken, much pain will ensue, because the deeper tissues which have been injured, and which will become inflamed, have otherwise no room to swell. Again, unless a free opening is made, the matter, which is sure to arise from the inflammatory action, will burrow and form abscesses and sinuses. The opening must be kept clean by frequent washing and dressing; and in some cases it may be advisable to insert a pledget of tow smeared with ointment in order to insure the maintenance of the opening.

If there is good reason to think that the puncture has penetrated a joint or the sheath of a tendon, the case must be treated as one of open joint; for the treatment of which the reader is referred to the section on "Open Joint."

Injuries to the feet of horses, especially those occasioned by treading on nails which penetrate into the tender part, within the hoof, constitute the most important of all this class of punctured wounds, as well as the most common. No other cause so surely leads to lockjaw as this does, and no other cause of lockjaw has hitherto proved so little amenable to treatment. But the homœopathic remedies, with proper surgical measures, the whole forming what may be termed homœopathic surgery, will save the majority of such cases.

Punctured wounds of the laminæ of the feet of horses, such as occur from their treading upon a nail, should be treated in the following manner: after extracting the nail, especially when the iron has penetrated so deeply as to cause blood to flow upon its being drawn out, for then the wound is deep and the danger great, pare down the hoof as much as possible without making an additional wound; lay open freely the puncture made by the nail, so that it may change its character as much as may be from a puncture to an incision; apply poultices made of boiled rutabaga turnips to the affected hoof, which must be put on very warm, and changed every two hours, or even oftener in cold weather; put the animal on a very light diet if he have been full fed before, or on moderate diet if he has been not so liberally provided for formerly; and, finally, after thus attending to the external treatment, give once in three hours ten drops of

Hypericum, of the third decimal dilution. If no improvement appear, and if the symptomatic lameness grow worse after the first two days of this treatment, give

Staphysagria, in similar doses, repeated in the same manner.

Cicuta virosa, in ten-drop doses, should be administered in all cases which fail to improve under the foregoing remedies, and especially in those in which spasmodic twitchings or other nervous symptoms begin to make their appearance, and where the incipient symptoms of lockjaw present themselves. This remedy may be given every hour until the emergency seems to have been passed, or until the gradual increase and continual persistency of the tetanic condition shows the failure of all possible treatment in the case.

But in addition to what is here laid down, consult a previous section, No. 239, on Tetanus, also the Materia Medica, for further indications of the remedies mentioned there and in this section.

432. Poisoned and Gunshot Wounds.—Poisoned and gunshot wounds being of very rare occurrence in the horse, and scarcely ever seen in other animals, nothing further need be said of them than that they may be treated, where they do occur, in accordance with the principles and methods already detailed for other varieties of (contused and incised) wounds.

Arnica, in suitable doses, will aid in recovery from the nervous shock incident to gunshot wounds.

433. Suppuration of Wounds will usually occur in the course of their healing; in fact, some greater or less amount of suppuration will take place in all except the few which heal by first intention. Those in which the suppurative process is excessive, or in any way unusual, will require specific medication. The principal and leading characteristics of the chief remedies for the various forms of suppuration will be found collected at the close of the two sections on Abscesses and Ulceration, which see.

434. Treatment, Medicinal, for Wounds.—*Arnica* should be employed externally in the form of a lotion, made by mixing one part of the mother tincture with fifteen parts of soft water, and given internally in doses of from ten to two drops of the third decimal dilution, in all cases of *bruised wounds*, bruises, or contusions.

For cuts it may also be employed, but other remedies are deemed more serviceable when the skin is ruptured.

For *traumatic fever*, given internally, it is indispensable, in doses of from three to eight drops once in two or three hours.

For further uses and indications for this remedy consult the Materia Medica.

Millefolium.—Pledgets of lint soaked in the lotion of this remedy —made by mixing one part of the mother tincture with nine parts of soft water—will form the best application to wounds which bleed profusely; if the wound is deep, these pledgets, made of the proper size, should be pressed to the bottom of it, and there allowed to remain; the blood coagulates, and they are thrown off as the wound finally heals up.

The same remedy should also be given internally at the same time, in doses, and repeated, as advised for Arnica. Only in cases of dangerous hemorrhage the medicine may be given every quarter of an hour till the flow is checked; it may be given in the same manner for hæmoptysis.

Calendula.—This remedy, used internally and externally as advised for Arnica, is generally more appropriate where there is a simple cut or other solution of continuity, without bruise or contusion, which would indicate Arnica. Calendula is most beneficial in open wounds, promoting favorable cicatrization with the least possible amount of suppuration; also in suggillations, or bloody and serous infiltrations of the cellular tissue, and in traumatic ophthalmia, or inflammation of the eyes which results from mechanical violence, it is of the greatest value.

China, ten drops every two hours—smaller doses for animals other than horses and horned cattle—will be required to remove the debility resulting from great loss of blood.

Symphytum officinale.—This remedy holds a high reputation for causing fractures of the bones to unite, and healing contusions and other injuries of the periosteum, also for indolent and scorbutic ulcers.

Dose.—Internally, the same as advised for Arnica; externally, a lotion (made like Arnica lotion), may be applied, at intervals of two hours, to injuries such as are suited to its uses; or compresses wet with this lotion may be allowed to dry on the limb or affected part, and moistened from time to time.

Rhus tox. will be needed when the wounds are attended with sprains, or luxation of joints. If the parts have been badly stretched, Rhus lotion, prepared as directed for Arnica lotion, should be applied; and the dilution at the same time given internally, in ten-drop doses for horses and horned cattle, and in smaller doses in proportion for smaller animals.

Acidum sulphuricum.—Indicated by spots of black discoloration (suggillations, ecchymoses) remaining as remote consequences of bruises. See also *Conium* in this connection. Sulph. acid is also recommended when after a wound the skin forms adhesions to the bones.

Conium maculatum.—In wounds with bruises and contusions affecting the deeper tissues and especially the glands. Effects of former bruises.

Dose.—Five drops three times a day.

Consult, also, in the Materia Medica, Asafœtida, Arsenicum, Sepia, Silicea, Mercurius, and Hepar s. c., which may be required in diffierent stages of healing and normal or abnormal suppuration of wounds; and also examine the indications for these and other remedies set down at the close of the sections on "Abscesses" and "Ulcers," and on "Diseases of the Bones."

The homœopathic remedies carefully applied externally and administered internally will obviate the need of surgical interference in many cases, and in all will reduce the time required for recovery from twenty-five to fifty per cent.

435. Abscesses.—An abscess signifies a collection of pus in any of the tissues or organs of the body. In structure an abscess consists of an accumulation of pus, in the midst of and surrounded by a layer of fibrin, which constitutes the walls of the abscess. This wall varies in thickness and consistence, being in some cases scarcely perceptible and in other cases forming the larger part of the abscess.

Suppuration may occur in any of the tissues of the body, but it is most frequent in the glandular structures, the skin, muscles, and mucous membranes. Cartilage and tendons suppurate only very slowly. Nerve tissues and arteries are but little susceptible of taking on the process of suppuration or of ulceration. Serous membranes, though they may suppurate, yet more generally under the influence of inflammation exude serum, or water, or lymph.

Suppuration or the formation of pus may according to circumstances be either a healthy or an unhealthy action; though it is in all cases a morbid process. Suppuration may set in for various reasons. It may be a means of removing some poisonous matter from the blood, or some foreign substance impacted in the soft parts of the body. In all such cases it serves a beneficial end, and must then be regarded as a healthy action.

A tendency to suppuration may also be generated by a disordered state of the blood after some lingering and weakening illness, such as fever; or it may be a result of blows or of ecchymosis. In other cases the tendency may be a consequence of breathing impure air, or of insufficient or bad food, or of disordered nutrition, or of any such causes which produce impoverishment of the system. Under certain circumstances, hereafter to be described, the suppurative matter forms abscesses.

Pus is a peculiar fluid, formed under certain diseased conditions of the system. Healthy pus is of a yellowish-white color, free from offensive smell, and of the consistence of cream. It consists of serum holding a number of globules in suspension. Each globule consists of a cell-wall inclosing nuclei, oil-globules, and small granules. Healthy pus is occasionally reabsorbed into the system without producing any bad effects. Nature sometimes cures an abscess in this way.

There are several varieties of unhealthy pus. It usually has an offensive smell. It is called sanious, when it contains blood; ichorous, when it is thin and watery; and mucopurulent, when it consists of mucus-containing cells. Puriform matter is formed by the softening down of a fibrinous exudation without the formation of true pus-cells. If suppuration is too profuse, it will exhaust the vital powers. Unhealthy pus, if reabsorbed into the system, will produce very injurious results.

The formation of an abscess takes place in the following manner. A part from any cause, we will suppose, has become inflamed. In the centre of the inflamed part the products effused by the process of inflammation begin after a time to break up and liquefy; or in other words, there are signs of the commencement of the suppurative process.

If there is a free depending exit for the matter, there is no need of an abscess; but it often happens that there is no such exit, and consequently the matter cannot get out. In such cases nature makes provision for its temporary retention and ultimate expulsion by means of an abscess. If the pus were to float about free among the tissues, it might affect them very injuriously, and might act as a poison or at least as a foreign body.

To obviate this, nature, by means of the fibres of the lymph surrounding the outer circle of the inflamed part, forms a membrane with a smooth villous secreting surface. In this sac the pus is retained instead of floating about among the tissues. The contained pus, however, gradually seeks to reach the surface of the skin or a mucous membrane; and then by means of pressure, which causes ulceration and rupture of the tissues between the cyst and the external air, the pus is evacuated.

The submaxillary tumor in strangles is a very good example of an abscess.

Sometimes the abscess is not able thus easily to discharge its contents, but a communication is established with the surface by means of a narrow canal with walls of a membrane similar to that inclosing the abscess. This canal is called a sinus. When the sinus is constricted at its external orifice, it is called a fistula. In cases of long standing the walls of the sinus often secrete a thin, serous, and sometimes offensive secretion.

The formation of an abscess, especially if acute, is often accompanied with fever. The part is painful, red, and swollen. Indications of relief are given by the tumor becoming softer and beginning to point; and at the same time fluctuation may be felt in it. Ultimately the integument ulcerates, and the pus is discharged. As soon as suppuration occurs, there is abatement of the fever.

436. General Treatment of an Abscess.—The treatment required is both local and constitutional. In very many cases we can do nothing locally, because the part, as for instance in the lungs, cannot be examined. Improvement in the condition of the animal will, however, assist in bringing about the curative process under the influence of constitutional medicines.

When the parts can be reached, the best plan is to open the abscess at its most depending point, so soon as we judge by the softening of the external membrane and by the sensation of pulsation or fluctuation, that it is ripe, or nearly ready to burst; or in the case of a chronic abscess, it may be necessary to open it to the bottom and to apply stimulants. If the abscess is internal, we must wait until by the operation of nature it bursts.

If the suppurative matter has burrowed and formed sinuses, it will be necessary to afford it a free exit; and in very many cases it will be necessary to cut the walls of the sinus *completely through* to the bottom, so as to convert it into an ordinary incised wound, which may be healed by granulation.

If the abscess instead of becoming pyramidal and pointing to a surface, spreads in breadth and circumference, it should be opened at once, because in such case there is no tendency to become encysted or circumscribed. Abscesses under strong fascia should also be opened at once, because that membrane will resist for a length of time the ulcerative process by which the suppurative matter gains its exit, and in consequence a sinus will probably form, unless an artificial opening is made. Abscesses which are caused by the presence of irritant fluids, should obviously be opened without delay; as well as those in loose areolar tissue, because in such cases there would be an undue tendency to spread. Abscesses in the neighborhood of joints or of important organs should also be opened early, lest the ulcerative process should affect those structures.

The suppurative process, if it is unduly slow, may be assisted and hastened by the application of a poultice or of a light blister; but it is essential that these agents should not be applied until the abscess shows signs of coming to a head. Too early an application of such agents is apt to disperse the matter which is forming or about to form.

For abscesses in internal parts we can do nothing more than place the patient in a condition favorable for their development, by good feeding, good care, &c.

It is hardly ever, we may remark, desirable to check or disperse the matter formed or seeking to form. The tendency to form an abscess is usually an indication that there is something in the system which nature, for her own wise reasons, wishes to eliminate.

437. Modes of Opening Abscesses.—An abscess in parts which can be reached, is usually opened by the knife, when the proper time has arrived, *i. e.*, a little before it would burst naturally. Two advantages are gained by opening it artificially, namely, first the opening may be made at the point most favorable for the escape of the pus; and secondly, a slighter blemish is made by a clean incision than by the large irregular opening made by nature, *i. e.*, by the process of ulceration of the integuments.

Any pus which remains after opening should, as far as possible, be squeezed out gently, and the cyst or sac may be injected with warm water from a syringe twice a day for two or three days, and the edges of the wound must be carefully kept clean. In some cases irritation of the cyst may supervene, with fever and pain and a discharge of sanious pus. To the warm water recommended above some slightly stimulating lotion, such as diluted ammonia, may be added, with a view of bringing about a healthier action of the parts. In other cases, the presence of a foreign body may prevent the abscess from healing, and possibly a sinus may result. Prior, however, to the formation of a sinus, such cases are best treated by applying stimulants to the surface or by injecting a stimulating lotion. For the treatment of a sinus, the reader is referred to the latter part of this section.

438. Various Kinds of Abscesses.—Abscesses may be divided into acute, chronic, and specific.

The acute abscess may be taken as the type of the disease under ordinary circumstances. Though often attended with pain and fever, it generally runs its course quickly, and therefore seldom needs any assistance to bring it to a head. Chronic abscesses are those which slowly appear without any constitutional disturbance except swelling. The cause of their appearance is often not very apparent. They frequently require to be stimulated by a blister, in order to hasten on the needful processes. Specific abscesses are those which result directly from some disease, such as strangles.

Abscesses are frequently a result of diffuse and violent inflammation in a part. They also occasionally occur as a consequence of phlebitis or pyæmia. They may occur in various parts of the body, and especially in the mesentery after an attack of strangles, when the tumor has not formed in the regular manner.

439. Sinus.—A sinus is a hollow passage lined by a mucous membrane and usually communicating with a suppurating cavity. This passage always opens at one end on the skin or on some free surface, whilst the other end is at the seat of irritation. The sinus, therefore, is not the disease itself, but only the tube leading from the diseased part to the external surface. Hence applications to a sinus are of no use, unless they reach the bottom of the passage, *i. e.*, to the seat of the disease.

When healthy action has set in at the seat of the disease, it often happens, notwithstanding, that the lining membrane of the sinus continues to pour out an exudation. In such cases the only plan is to cut through its walls and to make a complete division. The surfaces must then be prevented from healing too quickly by inserting a pledget of tow between them. An ordinary incised wound will thus have been produced, and nature will then probably heal up the parts by granulation. In minor cases it may be sufficient to inject the sinus with a stimulating or caustic lotion.

440. Serous Abscesses.—What is commonly called a serous abscess is not in reality an abscess, but merely an effusion of serum into the cellular tissue. A true abscess must contain pus. Frequent fomentations in the first instance and cold applications afterwards will often cause a serous abscess to disappear. Iodine ointment may also be applied, and iodide of potassium may be given internally with a view of promoting absorption. If these means fail, and a slight blemish is of no consequence, the knife may be freely used, and the wound treated as recommended in the latter part of the preceding paragraph.

For the medicinal treatment of abscesses, see list of medicines, and characteristic symptoms, at close of the section on Ulceration.

441. Ulcers and Sloughing.—Ulceration is that process of nature by which she separates from the living structures those parts which have lost their vitality. It consists in the progressive softening and disintegration of successive layers of the affected tissue. An ulcer may be defined to be a solution of continuity with loss of substance, owing to some action going on in the part itself which destroys the tissues. It is attended with the secretion of pus.

Sloughing is the final throwing off of dead tissue from the surrounding structures. Ulceration is the process by which the separation is effected.

The cause may be arrest of nutrition in the part and cessation of the deposition of new material, whilst the old is carried off; or it may depend on the process of absorption; or it may be an effort of nature for the elimination of dead matter. Again, when from any cause the nutrition of a tissue is altered, and especially if congestion takes place, ulceration is likely to occur. Defective nervous influence is also a predisposing cause. The ulcer always commences where the vitality is least.

Ulceration is also an occasional sequel of inflammation. When either by the violence of acute inflammation or by the more gradual effect of chronic inflammation the nutriment, which ought to be supplied to a part by the free and constant flow of fresh blood through it, is arrested, the tone and vitality of the part is lowered, and it is then in a state on which ulceration is likely to supervene.

Ulceration may, however, occur almost without inflammation, if the vitality of the part is sufficiently lowered, as in cases of ulcerated heels arising from horses being exposed to wet and cold. In other cases, ulceration is found as a result of a previously existing sore becoming indolent or unhealthy. An ordinary sore, for instance, forms, and from various causes it may become indolent, and in time the tissues effected lose to a greater or less degree their tone and vital power, and ulceration may follow, as a result, in the manner described above.

Ulcers often follow injuries of the external surface, such as bruises, and they frequently appear in unhealthy states of the system, where the skin has been worn off by the harness or other abrading surfaces. In all these cases the treatment should be mainly and primarily directed to the general health, to obviate any ill condition in the system, to give repose and nourishing food in place of hardship and poor fare, instead of local measures alone, which, such as healing ointments, are mostly relied upon by the great majority of old school veterinarians.

All tissues are liable to ulceration; but bloodvessels and nerves are not so subject to it as other structures. Hence they can often be seen permeating an ulcerating tissue.

Ulceration always commences at the surface of the diseased part, or in other words, at the most extreme point of the capillary vessels. Here of course the vitality is least, and therefore that part is the first to get into that low state on which ulceration is likely to supervene.

When the ulcerative process is about to manifest itself on a mucous membrane, there will be observed a red point or two and a few small vesicles on the surface of the part, from under which a watery fluid, or in some cases a thick, gray, slimy lymph exudes. The ulcerative process has now fairly set in. Particle after particle of the tissue, as each becomes dead, is removed, as described above. Each fresh removal adds to the size of the ulcer. As the sore becomes larger, its edges will appear more ragged-looking and swollen, and not unfrequently a fungoid kind of flesh will rapidly arise from the sides and bottom of the cavity. The appearance of any such growth is a very unfavorable sign.

442. Varieties of Ulcers.—Ulcers, according to the form they take, are described as fistulous, phagedenic, and sloughing.

Fistulous ulcers are those which run deep in various directions, eating their way through and under the surrounding tissues in long, narrow channels or fistulæ. Phagedenic or spreading ulcers present to view a round shallow cavity with ragged edges and a disposition to spread superficially. Sloughing ulcers are those in which considerable portions of the tissues come away at one time in flakes.

Ulcers are also classed as healthy, inflamed, weak, or indolent. A healthy ulcer has smooth edges, and a circular or oval surface studded with florid granulations secreting healthy pus. Such ulcers are prone to cicatrize and contract. An inflamed ulcer presents a red surface, and the surrounding parts are hot, swollen, and red. The discharge is sanious and offensive. A weak ulcer has large, pale, flabby granulations, which have but feeble vitality. An indolent ulcer has a flat surface, with raised, white, irregular edges, and a thin, sanious discharge. If granulations are present, they are of a weak character.

443. The General Treatment of Ulcers consists mainly in attention to the general health. The causes, which have been detailed above, show plainly enough that ulceration results from a low state of vitality, either in the system generally or in the part immediately affected. Every means, therefore, such as good feeding, good grooming, plenty of fresh air, and the administration of tonics, must be adopted in order to improve the general health. An ulcer seldom refuses to heal unless the tone of the system is low and deficient.

The best local treatment for a simple ulcer is a plain cold water dressing. The reparative process will not commence until the inflammation in the part is entirely reduced. As a general rule, ointments are injurious and retard the cure. If, however, the ulcer is indolent, moderate pressure round it will be useful, with the addition, if need be, of a stimulating lotion. If this is not sufficient, a light blister may be applied somewhat frequently round the neighborhood of the sore, with a view of exciting a healthier action of the parts in its vicinity. If the ulcer is very irritable, a sedative lotion may be substituted for the cold water dressing. Other circumstances may require that the dressing should be of an emollient or of an astringent character.

If the ulcer arises from a plainly and purely local cause, such as the injury done to the underlying tissues by the pressure of a saddle on the withers, local treatment alone may be sufficient to bring about a healthier action; but in all more serious cases we can only look for the commencement of the curative process by improving the general health and the tone of the system.

The healing process always begins at the edges of the sore. Its commencement is marked by several changes within the tissues contiguous to the ulcer. In the first place they acquire greater firmness; secondly, the exposed surface of the sore assumes a more healthy character, the edges and the granulations become more red, the granulations become covered with cuticle commencing from the edges, and thereby general contraction of the size of the sore takes place; thirdly, the discharge which exudes from the sore, acquires a greater consistency and becomes of an albuminous character. This healthy secretion gradually spreads over the ulcer, serving a double purpose, namely, it protects the raw surface of the sore from external agents, and again it by degrees becomes organized, and by successive layers in due time fills up the cavity.

During the process of healing, however, it often happens that the granulations become too luxuriant; and in such case it will be necessary to check their growth, either by pressure or by the application of lunar caustic or some slight styptic, such as burned Alum, powdered.

444. Treatment, Medicinal, of Suppuration, Abscesses, and Ulceration.—*Aconite:* Three- to ten-drop doses may be given, when the fever is high, in a local inflammation, swelling, or tumor, threatening to suppurate, and form an abscess, repeated once in two or three hours.

Belladonna may be indicated under similar circumstances when the tumor is hot, red, far around, and painful to the touch.

Dose.—As for Aconite.

Bryonia.—When the tumor alternates in color from red to white, with tension and heat of the skin, and aggravation on the least movement.

Dose.—As for Aconite.

Mercurius.—This remedy is believed to have prevented suppuration in many instances. Where no special indications can be found for other remedies, this may be given, in similar doses to those above recommended, with good hope of success. Spreading ulcers; ulcers discharging a corrosive fluid; raw appearance of ulcers; healthy and malignant suppurations; suppuration of glands; herpetic spots and suppurating pustules: these various forms of ulceration and suppuration are so many indications for Mercurius, which thus may become curative of a large number of cases of ulcers, and of suppurating wounds, when the system is in tolerable condition.

Arsenicum.—Intense burning heat in the tumor.

Proud flesh forms in the wound (also Sepia and Chamomilla). Ulceration in weakly and debilitated animals, and in those broken down by hardships and poor fare, will often be greatly benefited by Arsenicum, six drops three times a day; suitable also for deep, readily bleeding, gangrenous, inflamed (red, angry or everted edges), putrid, and corroding and spreading (phagedenic) ulcers. Pustules, red, changing to ichorous, crusty, burning, and spreading ulcers. Black blisters. Carbuncle. Mortifying ulcers; putrid; with high edges; with red, shining border and dark base; ulcers with thin, bloody, bad-smelling pus; with fetid ichor and proud flesh, which soon becomes putrid and green. Cancerous ulcers.

Dose.—Five drops, thrice daily.

Hepar s. c.—From five to ten drops given once in three hours will promote ulceration and suppuration, when the disease has too far advanced to be arrested without; and then favor the final healing.

Asafœtida.—Abscess characterized by discharge of thin, discolored, and highly offensive matter; ichorous pus of a bad odor; bluish, greenish, turning black, and carious ulcers; the ulcer has hard edges and is painful to the touch.

Dose.—Five drops, thrice daily.

Silicea moderates excessive suppuration; indicated in chronic suppuration of the joints; spongy and readily bleeding ulcers with torpid callous edges; fistulous ulcers, secreting a thin, ichorous, fetid, yellow fluid; caries of bones with fistulous openings, and discharge of thin pus and long fragments.

Dose.—Four drops, three times a day.

Acidum sulphuricum.—Ulcers with dark spots, and discoloration of the skin, arising in consequence of mechanical injuries, contusion, pressure; contusions with excoriation. Purple spots on the skin, unhealthy skin, with great prostration of the strength.

Dose.—From five to ten drops, every four hours.

Conium maculatum.—Indurated tumor of the glands, threatening suppuration, resulting from compression or other mechanical injury.

Baryta carbonica.—Indurated tumors in the head; also Belladonna; enlarged glands which threaten suppuration; tubercles in the jaw; a specific for softening hard abscesses, and in many cases causes the removal of (scrofulous) tumors without suppuration.

Hydrastis.—Very useful in indolent ulcers and abscesses, externally, and internally in ten-drop doses. (See Materia Medica.)

Pulsatilla.—Hot tense swellings after a cold; specific in some cases of fistulous ulcers.

Ledum palustre.—Fistulas with large opening, white and lardaceous bottom.

Lycopodium.—Fistulas with small orifice and numerous burrows.

Calcarea carbonica.—Suitable in many varieties of fistula.

For other indications for these and the following named remedies, consult the Materia Medica: Carbo vegetabilis, Iodine, Kali carbonicum, Sepia, Chamomilla, Aurum, Rhus tox., and Sulphur.

Dose.—Give of the selected remedy from three to ten drops according to the size and age of the patient; and repeat night and morning; when improvement appears, at night only; or when still better, every other night only.

Diet.—Support the poorly fed with nourishing and various diet; moderate the food of those too highly or richly fed.

CHAPTER XIV.

MISCELLANEOUS DISORDERS.

445. Weed or Lymphatitis.—In horses, this is rather a frequent disease, consisting of inflammation of the lymphatic vessels and glands of the legs, especially the hind ones. Blaine[*] gives a full account of these absorbents, but says nothing of their disorders, save the remark that in the human subject the mesenteric glands are more prone to disease than the lymphatic; but in the horse the contrary is the case. Weed is most frequently observed in cart-horses, and is caused indirectly by errors of feeding, and directly by injuries, exposure of the legs to damp and cold, &c. I have noticed that many horses are attacked on a Monday morning, after the previous day's rest.

Usually, the attack comes on suddenly with a shivering fit, followed by feverishness, quick pulse and breathing, hot, dry mouth, &c. The affected leg is raised from the ground, and the horse frequently looks round to it, as if to tell where his pain is. The leg on examination is found to be hot, swollen, and tender to the touch. On the inner side of the thigh and leg, we discover a hard, painful, cord-like enlargement along the course of the lymphatic vessels, with here and there several enlarged glands, or valves in these vessels. The swelling of the vessels and leg begins in the groin at the bend of the thigh, and gradually creeps downwards along the inner surface of the leg, as far as the hock-joint, or even to the fetlock. The tumefaction of the leg pits on pressure, and in severe cases an amber-colored fluid oozes out from the skin, and stands in drops on the hair. One attack predisposes to subsequent ones, and the leg is left permanently enlarged.

446. Treatment.—Dr. Moore, of whose account of this disorder we have availed ourselves, says: "I have treated many cases of both these diseases, and at the time I write have just seen several improve rapidly. Several remedies have been employed, but of late I rely exclusively on *Kali bichromicum,* ten drops, every three hours. I also cause *Kali bichrom. lotion* to be rubbed in night and morning. In some cases, I first give a few ten-drop doses of *Aconite.*"

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[*] "Veterinary Art," p. 147; and notes, p. 148.

447. Cellulitis.—"This disease," says Dr. Moore, "I believe I was the first to describe in my *Veterinary Homœopathy Illustrated.* It is often confounded with weed, from which it may be distinguished by the absence of the enlarged vessels, valves, and glands in the inside of the thigh; by the swelling first appearing in the fetlock and extending *upwards* to the hock, sometimes to the thigh; by its attacking equally any leg; and by the skin breaking at the most prominent part of the swelling, and giving vent to a large quantity of foul matter. A slough is cast out from the opening, and a deep, unhealthy ulcer remains. At the same time the animal is feverish and his breathing is quickened, the fæces hard and coated with mucus. The leg is excessively painful to the touch, and frequently so hard that the swelling does not pit on pressure with the finger. One attack, like weed, predisposes to the subsequent ones, and the leg is left permanently thickened."

448. Treatment.—*Aconite* should be given, in ten-drop doses, every three hours.

Kali bichromicum lotion (made by dissolving sixty grains of the salt in one pint of water) should be well rubbed into the affected parts night and morning.

449. Mumps.—*In Horses:* This disorder consists of inflammation of the parotid gland. In addition to the parotid, the gland on the inner side of the lower jaw-bone may likewise be inflamed. This especially happens in strangles. In ordinary cases, after exposure to cold, or from some other cause, the animal becomes feverish, off his feed, thirsty, &c.; then symptoms of sore throat come on—cough, difficulty and evident pain in swallowing, and some obstruction to the breathing. The gland, usually on one side, sometimes on both, swells and becomes hard and painful to the touch. The swelling does not go on to the formation of matter, but remains hard for some time.

In Oxen.—Mumps is perhaps seen more frequently in oxen than in horses, especially in winter, during stall feeding.

450. Treatment.—Foment with hot water for half an hour three times a day, and after each fomentation apply a hot bran poultice.

Two medicines are generally sufficient in this disease—*Belladonna* and *Mercurius*, in alternation, four hours between each dose.

Dose.—Ten drops, in a wineglassful of water.

451. Sore Throat—Angina.—*In Horses:* Sore throat is the name commonly applied to an inflammatory condition of the back of the mouth, which is more or less affected throughout its entire extent. It is generally associated with and is a prominent symptom of inflammation of the larynx, although it may exist as an independent disorder. It very often attacks young horses out of condition when brought out of the farmer's hands and put into hot, ill-ventilated stables, and when they are sent to work and placed on unusually good food. This change in their stabling, work, and feeding, predisposes them to be acted upon by exposure to the weather, and sore throat is induced, or some more serious disease of the breathing organs.

In simple sore throat there is some febrile excitement, with loss of appetite, thirst, &c., followed by hard, dry cough, difficulty of swallowing, quick breathing, and swelling of the throat externally, as well as tenderness when it is handled. The glands under the jaw and below the ears are hot, tender, and swollen. Subsequently, the cough is looser, a discharge flows from the nose, and the mouth contains a frothy fluid.

In the majority of cases these symptoms gradually subside until health is regained, or symptoms of laryngitis or of bronchitis come on.

Sometimes the inflammation extends to the guttural pouches, and then, if matter should form, as is occasionally the case, there may be great obstruction to the breathing.

In Oxen and Sheep.—Sore throat is most common in these animals when they graze on damp lands, during cold springs and autumns. In some seasons sore throat is exceedingly prevalent amongst cattle. The symptoms are much the same as in the horse. We find the same feverishness, difficulty in swallowing, pain and swelling of the throat, and, in addition, there is no chewing of the cud.

In Dogs.—Besides arising from cold, sore throat in dogs frequently results from the local action of an irritant substance swallowed. On examining the throat, which can be done more readily than in larger animals, the parts are seen to be red and swollen. The general symptoms are the same as in the horse.

In Swine.—The pig is subject to two distinct diseases of the throat; one consisting of ordinary inflammation of the mucous membrane lining the throat, palate, and larynx; the other bearing a close analogy to the diphtheria of man, in so far as there is formed a membranous exudation on the diseased surface.

The first form begins with loss of appetite, dulness, disinclination to move, &c., followed by feverishness, difficult breathing, gasping, cough, bluish color of the mouth, swelling of the tongue, obstructed and difficult swallowing, and choking. A hard, red, painful swelling appears on the neck, sometimes extending down the course of the windpipe. There is great prostration, and a tendency to gangrene and sloughing.

In the second form, the general symptoms are somewhat similar, and depend upon the local mischief interfering with swallowing and breathing, whilst the constitution at large suffers from the blood being vitiated.

The remedies for each of these forms will be pointed out at the close of the next section, under the head of "Treatment."

The sties should be well cleaned out, and kept clean; the diseased separated from the healthy, and gruels drenched in.

452. Malignant or Putrid Sore Throat.—This disease is said by Dr. Moore, of Great Britain, to be not very frequent in that country; but in some localities to have proved rapidly fatal in horses and oxen. It differs from simple sore throat in the suddenness of its attack, and the rapidity of its course, as well as in the greater gravity of the general symptoms. At first, high fever comes on, which is speedily followed by swelling and pain in the salivary glands. The throat, inside and out, swells to such an extent as seriously to interfere with swallowing and breathing; the animal then refuses all food, and the breathing becomes noisy and choking. The breath is most offensive, and gets more so as the disease advances. The animal has an anxious and distressed look, the difficulty of breathing increases, indications of prostration advance, and death soon puts an end to his sufferings.

453. Treatment.—*Aconite:* At the beginning of the attack, where there are fever, pulse quickened, respiration accelerated, the membrane of the eye and nose red and injected, Aconite, given in doses of from three to ten drops, according to the size of the animal, will arrest the disease at once.

Belladonna.—This remedy is better adapted to a later stage, when the inflammation is more firmly established; and it is indicated by swelling and tenderness of the glands of the throat externally, great difficulty and pain in swallowing—so much so as to cause the fluids to return by the nose—and by discharge of stringy saliva from the mouth. The existence of a dry, irritating cough is an additional indication for Belladonna.

Dose.—Three to ten drops, once in four hours; when better, once in six hours.

Mercurius may be given in those cases in which Belladonna has exerted an unfavorable influence, or it may be given in alternation with this remedy, three or four hours apart, in doses of two to five drops for a dog, of five for sheep and swine, and of ten drops for horses and horned cattle. If there be much external swelling and tenderness, foment three times a day with hot water, and afterwards apply a good-sized hot bran poultice to the throat. Give cold water and gruels of linseed or oatmeal, and have the stable well ventilated.

Kali bichromicum may be employed in the second form of throat disease in the pig, that which, from the formation of deposits in the fauces, bears a resemblance to diphtheria in the human subject.

Dose.—Ten drops, every two hours, till improvement begins, then once in three or four hours.

Arsenicum.—In malignant sore throat, with symptoms of prostration, tendency to gangrene, and offensive breath, this remedy will be specific.

Dose.—From three to ten drops, according to the size of the patient, every two hours; lengthening the intervals as improvement appears.

Carbolic acid.—This powerful antiseptic may be employed in putrid sore throats which do not yield readily to Arsenicum.

Dose.—Ten drops, every hour or two hours, till improvement sets in. Inhalation of the fumes of this acid—from pouring twenty drops of the strong solution on a pint of hot water—may be resorted to as a matter of convenience, and in desperate cases of malignant sore throat.

454. Lampas.—Lampas is a trifling ailment peculiar to young horses. It consists in inflammation and swelling of the anterior portion of the palate. It is connected with the process of dentition, and generally occurs about the season when the teeth are changing. The soreness of the palate usually prevents the animal from eating his corn for a few days, and the inflammation sometimes causes slight feverish symptoms.

Ordinarily no treatment is necessary, except to put the patient on bran and soft food for a few days, at the end of which time the inflammation of the palate will have subsided and the animal will again feed.

It is the custom, and it is harmless enough and has the advantage of pleasing the groom, to scarify the palate with a lancet. The operation gives immediate relief, and the animal will probably feed again at once. But it may be doubted whether so trifling an ailment needs the treatment.

A brutal practice was in fashion some years ago of burning the palate with a hot iron.

Lampas is sometimes an effect of difficult dentition, or appears at times when catarrhal symptoms are present. The swollen bars often project beyond the surface of the upper incisor teeth, and become so painful as to prevent the animal from eating. *Mercurius vivus* is the chief remedy in treating this affection; next comes the *Natrum muriaticum;* also *Belladonna, Hepar sulphuris, Phosphoric acid*, and *Sulphur.*

455. **Cysts.**—*Calcarea carbonica* has generally succeeded in the treatment of indolent tumors divested of hair, which come out, with greater or less size, on different parts of the body; when it failed, some doses of *Graphites* never failed to effect a cure. With respect to tumors produced by contusions, they are to be treated with *Arnica* internally and externally, and if they resist, *Mercurius vivus* or Hepar sulphuris effectually opens them.

456. **Bones and Periosteum, Diseases of.**—*Periostitis:* Periosteum, or the outer covering of bone, is composed of dense, tough, inelastic, vascular, white, fibrous tissue. Its function is to nourish, strengthen, and protect the bone. It also serves as a medium to conduct the blood-vessels over the surface of the bone. The periosteum is exceedingly strong,—so strong and tough, that in cases of fracture of a bone it is often enabled to hold together the two parts.

Periostitis or inflammation of the periosteum may be readily caused by injuries, by exposure to cold, by blood diseases, or by extension of inflammation existing in the bone. The secretion effused from the periosteum during the process of inflammation is very apt to solidify and in due time to become bone. Hence we often meet with exostoses as a result of inflammation of the periosteum or of any of the osseous structures. The great pain produced by inflammation of a bone is due to the very inelastic nature of its outer covering. Nerves are freely distributed to the periosteum, and accompany the arteries into the interior of the bone.

Caries.—Caries is an unhealthy inflammation of the cancellated or inner tissue of bone, which causes softening, suppuration, and ulceration. It is induced by want of proper nutrition. Occasionally it implicates a part of the compact tissue.

The primary symptom is apparent swelling of the bone. After a time sinuses form, from which an offensive sanious discharge exudes. If a probe be introduced into one of the sinuses, the interior of the bone will be felt to be soft. As the disease progresses, the part affected assumes a worm-eaten, excavated, and broken-up appearance. The many cavities become the seat of various exudations. The cancellated tissue gradually breaks down, and is discharged in minute fragments along with pus.

The exudation proceeding from caries is distinguished by being thin, acrid, excoriating, sanious, and foul, on account of its consisting of the decomposing organic materials of bone. It does not, however, always appear to be thin, because when it afterwards, as is sometimes the case, flows over a mucous membrane, it may become mixed with the secretion of that tissue and in consequence may assume a clotted appearance.

The periosteum is injuriously affected by the acridity of the discharge, and after a time is destroyed by it. When this result has been produced, the disease proceeds more rapidly, because the carious portion of the bone is now deprived of the nutriment which ought to be supplied to it by the periosteum. In this case partial necrosis generally supervenes. No distinct line or margin can be drawn between a carious and a sound part. They glide insensibly into each other. It is remarkable, that in caries nature makes no effort to supply the place of the part which perishes.

Treatment of Caries.—Caries, when fairly established, may be said to be practically incurable. Bone affected by this disease is never restored to its former state. The object of treatment is rather to arrest the progress of an incipient attack than to attempt a cure. This is the allopathic view; but homœopathy does better.

Having regard to the origin of the disease, in want of nutrition of the tissue affected, liberal feeding, with tonics and attention to the general health, are obviously of primary importance. The part ought to be washed frequently by means of a syringe with warm water, to which may be added a disinfecting lotion or dilute nitric acid.

If these measures fail in arresting the progress of the disease, it will hardly be worth while to go to the expense of further treatment,—as restoration of the part cannot be expected. The animal had better be got rid of. The compact tissue is seldom attacked.

Necrosis.—Necrosis is death of a bone or portion of a bone *en masse.* Caries, on the other hand, is death by gradual decay and absorption of the particles of the structure. Again, necrosis, unlike caries, usually occurs in the compact tissue.

This disease is often a consequence of inflammation of the bone, which, as the reader is aware, may arise from very many causes. Among other common causes are severe injuries, excessive pressure, contusions, &c. It may also arise from any causes which affect the due nutrition of bone, such as the removal of its periosteum, or from general debility of the system.

Necrosis is particularly distinguished from caries by the endeavor which nature makes to supply the place of the portion which has perished. The periosteum and healthy structures around the dead bone effuse lymph. This ossifies and forms a case over the necrosed part. The new bone is therefore always larger, and it is also more spongy in texture than the original bone. The articular extremities are usually unaffected.

The old bone, though dead, is not removed until the new is formed. This is a merciful provision of nature. The duty of the veterinary surgeon is to support the strength of the animal whilst the reparative process is going on, and at the proper time to assist in the removal of the necrosed bone. If on introducing through the cloacæ a probe or two probes, one in each hand, a piece of bone is found to be quite loose and separate, it may be removed by the forceps; or it may be necessary before removing it, to divide it with a bone-cutting forceps into several pieces, or perhaps to enlarge the opening. Great care and gentleness are required in these operations, otherwise a sharp spicula of bone may cause dangerous hemorrhage by perforating one of the larger arteries in the neighborhood.

Necrosis, we may add, runs a certain course, and nature endeavors to effect a cure by the formation of new material. Art can only assist by aiding the removal of the old bone at the proper time. If such assistance is not given, nature will in time effect it by setting up a process of caries and sloughing; but it is desirable to avoid the necessity for this further disease. The pus in necrosis, it is to be observed, is healthy, whilst in caries it is unhealthy.

Exfoliation.—Exfoliation is simply the death of a superficial layer of bone.

Inflammation of Bone and Periosteum.—Inflammation is readily set up in bone or in its periosteum, or in both, by concussion or contusion, or by the extension of inflammation from a neighboring part.

The processes of inflammation have been already detailed. Osteitis is the name given to inflammation of bone; periostitis is inflammation of the periosteum. They are the same in bone as in the softer tissues. As a result of inflammation, effusion takes place through the overloaded vessels of the part. The effusion may be wholly taken up again by the veins and absorbents. Very generally, however, some portion of it remains between the bone and its periosteum. This deposit in due time, after parting with the more watery portion of its constituents, solidifies and becomes bone, or something like bone. In fact an exostosis is formed. It is a rule in nature, as has been previously stated, that deposits resulting from inflammatory effusions have a tendency, when they become organized, to partake of the nature of the tissue into which the exudation is effused.

Exostoses.—Exostoses usually arise, as described in the preceding paragraph, from inflammatory action in the bone or periosteum. They may, however, arise from ossification of a fibrous or cartilaginous tumor on the periosteum. At other times they are formed by abnormal development of any particular part or process of a bone.

The new bone is always more spongy in its texture than the original tissue; but after a time it consolidates in a great degree. It never, however, becomes equal to the old bone in density and strength.

Osseous deposits, though they may seem to disappear, are seldom totally removed. They are only lessened. The absorption of that part which would be removed in time by the operations of nature, may be hastened by the application of friction, Mercury, Iodine, or Biniodide of Mercury, to the part.

Anchylosis or Stiff Joint.—Anchylosis or stiff joint is a result of previous disease, rather than a disease in itself. It is occasioned by the presence of deposits, which have resulted from previous inflammation in the structure of, or in the neighborhood of the joint. It consists in more or less complete consolidation of the parts within or around the articulation.

For confirmed anchylosis arising from fixed adhesions, contraction of ligaments, and such complete consolidation of the parts around the articulation as results from inflammation, there is of course no remedy, except such serious surgical operations as could only be undertaken in special cases, and of which it is not within our province to treat.

457. Treatment.—Perhaps no other disorders show more admirably the splendid resources of homœopathy than those of the bones. The periosteum or covering of the bones is liable to inflammation, as already described, from injuries, and from ulceration of soft parts in the vicinity, as well as from diseases of the bones themselves. Thus we have periostitis, osteitis, exostosis, caries, and necrosis, as the diseases which may successively arise, all as amenable to homœopathic medication in veterinary practice as in the human subject. And the indications for the most valuable remedies in this class of diseases must necessarily be the same for the former as for the latter class of patients.

Calcarea carbonica.—Exostosis, in the limbs especially. Osteitis with swelling. Caries and necrosis. Diarrhœa. Emaciation.

Asafœtida.—Exostosis, caries, and necrosis, especially of the limbs; softening of the bones. Particularly suitable after the abuse of Mercury. Bluish redness and swelling of the external parts. Ulcers with bluish hard edges, very sensitive to the touch. Discharge of thin and very offensive pus.

Belladonna.—Exostosis of bones of the head, with caries of palate bones.

Ruta.—Periostitis and pains, in consequence of external injury, with erysipelatous inflammation of the external parts.

Phosphori acidum.—Periostitis and osteitis after an external injury.

Phosphorus.—Exostosis on the skull, with pains worse at night; swelling of the glands of the neck; emaciation; constipation; lameness and weakness of the legs; swelling of the clavicle.

Mezereum.—Periostitis and swelling of the bones, especially on the fore leg below the knee; pains worse at night. Particularly useful in cases that have been mercurialized.

Silicea.—Very suitable for caries, exostosis, and necrosis. This remedy, or Calcarea, is applicable in the great majority of cases of disease of the bones. It is also remarkably indicated by fistulous openings and discharge of fragments of bone.

Calcarea phosphorica.—Similar to Calcarea carbonica, in diseases of the bones; it combines here the virtues of Phosphorus and Calcarea c. In cases of fracture of bones, where, instead of the desired union, a callus forms that does not ossify, Calcarea phos. may be given with good results.

In addition to the brief hints here given, numerous other indications for these and the following named remedies may be found in the Materia Medica section of this work: Carbo animalis, Mercurius, Hepar s. c., Nitric acid, Ammonium, China, Staphysagria, Dulcamara, Lycopodium, and Sulphur.

Dose.—For horses and horned cattle, ten drops of the selected remedy may be given twice or thrice daily; for smaller animals, a less number of drops in proportion. As soon as improvement begins, let the medicine be given but twice daily; then once a day; and as the improvement becomes still more manifest, give a dose only every other day.

Sometimes it may be proper to discontinue all remedies for a few days, then select another or the same, in accordance with existing symptoms, as suggested in Chapter I of this work. More special attention should be paid to these directions from the fact that the treatment of such cases will often be protracted.

Careful attention at the same time must be paid to the general health, and every present constitutional symptom taken into consideration in making choice of the remedy. Diseases of the bones, like those of the eye, can only be recovered from in proportion as the patient is brought up to a tolerably healthy condition in general.

458. Fractures.—Fractures are distinguished by some or all of the following symptoms. 1st. The bone is displaced. Pressure or weight thrown on it causes still further displacement. In the case of long bones the broken ends, if the fracture is right across, may pass each other, and thus the limb will be shortened.

2d. The fractured limb partially or entirely loses its power of voluntary movement; but by external force it can be moved more readily and in a greater variety of directions than when sound.

3d. When a broken bone is thus moved, the fractured surfaces may be felt and heard to grate on each other or "crepitate." This crepitation is especially noticeable, if the fractured surfaces are rugged, and still more in comminuted fractures. In fractures of an important bone there will also generally be twitching of the neighboring muscles.

4th. From rupture of the adjacent bloodvessels and consequent escape of blood, or from laceration of the neighboring soft parts there is usually a considerable swelling about a broken bone. From the same causes the skin, where it is visible, may be discolored, and the parts hot and tender.

The causes of fracture may be included under two heads, namely, violence to the bone itself or to some adjacent part, such as occurs in the case of falls or kicks; and less commonly from excessive muscular strain. The sesamoid bones for instance are occasionally broken by the stress thrown on them by the suspensory ligament.

In some horses, as in some men, the bones appear to be abnormally fragile, probably from imperfect nutrition and fatty degeneration. The liability to fracture also increases greatly in old age.

Fracture of the Pelvis.—Any of the three bones constituting the pelvis are liable to be broken. The most common and least serious of these injuries is chipping a piece off the spinous process of the ilium, usually from the animal coming in forcible contact with a doorpost or gate. When the observer stands behind, the flatness of the injured side is very perceptible, and in popular language the hip is said to be "down." The piece of bone, when separated, occasions no inconvenience, and after a time becomes inclosed in a cyst. A similar injury sometimes, though much more rarely, occurs to the spinous process of the ischium in the posterior part of the hip. These injuries do not usually cause any permanent unsoundness.

The shaft of the ilium may be broken by a fall. This accident most frequently occurs in heavy draught horses. On account of the stoutness of the periosteum and the general position of the bone, the broken ends may not be much displaced; but the nature of the accident is apparent from the tenderness of the adjacent parts, and from the swelling and soreness felt, when the hand is introduced by the rectum, and also by the crepitation observable especially when the patient is moved slowly forward, whilst the hand within the rectum is held over the seat of injury. The animal will straddle greatly in his gait.

If the fracture is not extensive and does not involve the hip-joint, and there is not much displacement, and the animal is not irritable, repair may take place. The patient must be restrained from laying down, and kept as quiet as possible. Nature may and often does in these cases keep the broken parts in proper apposition, but art cannot from the position of the parts do anything to assist. In favorable cases the bones will have fairly reunited in about three months, and the animal may probably be sound.

Occasionally the fracture is very extensive and involves the hip-joint More rarely the body of the ischium is broken. In a few cases the symphysis pubis is fractured. All such injuries preclude any hope of recovery.

Fracture of the Pastern Bones.—Fracture of the great pastern bone sometimes occurs, but that of the small pastern or os coronæ is more frequent. It occurs very suddenly, and particularly in horses with high action. Probably the fracture results from the foot coming to the ground in a faulty position, and thus receiving unexpected concussion, whilst the parts of the leg are not in the proper position to receive it.

Fractures of either of these bones are very uncertain as regards the chance of cure. When the horse gets a little better, he is very apt to attempt to move his leg or to place weight on the foot, and then the fractured ends may probably separate again. A simple longitudinal fracture is worth treatment, but a comminuted fracture is not.

Broken Ribs.—The ribs are rather frequently broken; and if so, the ends generally overlap. It may be possible by manipulation temporarily to readjust the ends, but it is not possible by any mechanical means to retain them in their proper position. No material harm ordinarily results from their overlapping; though in some cases a broken end thoroughly displaced and turning inwards may injure some of the internal organs and even cause a fatal result. To prevent this, excision of the part may in such cases be necessary. Nature will afterwards fill up the intervening space with callus.

The treatment, in addition to rest, consists in applying a large wide roller or stout webbing over the part, in order to confine the bones in one position as much as possible, and thus prevent undue expansion of the ribs. The roller must be kept in its place by means of straps attached to a collar on the neck.

Fracture of the Nasal Bones.—Fracture generally produces depression of the bones, and the breathing is then interfered with. The treatment consists in raising the bones with some blunt-pointed instrument to their proper position. To do this it will probably be necessary to make an incision through the skin. The bones must be retained in position, until reunion takes place, by pitch plaster and strips of stout pasteboard, or by any other mechanical contrivance convenient in the particular case. The animal's head should be kept tied up for a considerable time afterwards.

Fracture of the Jaws.—The lower jaw is liable to be fractured, especially under the molar teeth, where it is very slender. After readjustment splints and plasters must be applied to retain the bone in its place; and until union has taken place, the animal must be fed on sloppy diet, so that he may require to masticate as little as possible.

Some excellent remarks on facial injuries by Professor Varnell will be found in the Veterinarian, 1866–1867.

Partial Fracture of the Tibia.—If the tibia be fractured right across, the case is hopeless; but when the blow occurs on the outside, where the parts are well protected by muscles and ligamentous and tendinous tissues, it often happens that the bone is not fractured through; or the fracture may be merely a longitudinal split. In such cases the periosteum may be strong enough to hold the parts together; and if the nature of the injury is discovered at once, the animal will often recover after a few weeks' rest. It very often, however, happens that the real nature of the injury is not suspected, and the horse after a few days' rest is again sent to work, and then the bone at the first strong exertion becomes fractured through.

Fracture of the Shoulder-Blade.—This accident is rare. In walking an animal trails the toe along the ground. If, when the foot is brought forward, the hand be placed on the shoulder, a crepitation will probably be felt.

The fracture is usually across the neck; and if so, the case is hopeless. A longitudinal, but not a transverse, fracture in any other part may possibly with rest reunite evenly, and the animal may perhaps become sound.

459. Treatment.—The first indication is of course to *set* the fracture, to replace the parts, if out of place, in their natural position; the homœopathic remedies for the cure of fractures are few in number, but sufficiently efficacious.

Arnica, externally and internally, as recommended for bruises, should first be employed when the fracture is caused or occasioned by bruises or contusions.

Symphytum should be employed afterwards, and from the first in other cases, in accordance with the following directions of Gunther.

In Horses.—It sometimes happens from a fall or a severe blow, that a greater or less portion of the bones of the ilium become fractured. There then appears in the same place a hot, painful tumor; the horse limps, chiefly at the commencement; and when we view him from behind, we see the affected haunch lower than the other. This accident is never dangerous in itself. Every time the case is presented to me, I have removed it by employing externally the strong tincture of *Symphytum*. I also give some drops of this internally from time to time.

Fractures of the ribs are often cured of themselves; they are treated with *Symphytum*. When they are complicated with splinters projecting internally, they are liable to produce suppuration of the lung.

Like other fractures, those of the bones of the nose are cured in a little time by *Symphytum*. Any splinters that may exist must be carefully removed.

Fractures of the bones of the legs are not uncommon in the horse. They are discovered by the animal being unable to rest on the affected limb, which, when carefully examined, exhibits the presence of flexion in a part where there is no joint, and causes a crepitation which is produced by friction of the ends of the bone. An inflammatory swelling soon attacks the part, which becomes very painful to the touch. Fractures of the limbs have been considered as incurable, in consequence of the weight of the body; but several facts have satisfied me that with proper precautions we may succeed in curing them. The first is, after having duly fitted the ends of the bones as exactly as possible, to surround the fracture with broad bandages of cloth, over which we are to apply two iron splints, excavated in the form of a gutter, so that the one placed on the posterior surface may pass some inches beyond the hoof, and the affected limb may rest on it. We must then pass large girths around the chest and quarters, and under the belly an empty sack, or broad piece of canvas, which is attached to the ceiling with ropes and pulleys, to be altered at pleasure, so that during the entire time of treatment the animal may be kept in a state of semi-suspension. With respect to internal treatment, he is to take on the first day two doses of *Arnica*, then one every other day; then after four or five days, every two days only, one dose of *Symphytum;* and the bandage is to be frequently wet with cold water, to which there has been added from a third to a sixth of this medicine, in the mother tincture. At the end of eight days the bandage must be removed to see whether the fragments of the bone have been duly brought into apposition, after which it is reapplied, and so left until there is a complete cure. Up to this time we may continue to use the *Symphytum* both internally and externally.

Calcarea phosphorica may be substituted, in ten-drop doses, twice daily, where there is too great delay in the bones uniting; where, instead of thus firmly growing together, a callus remains and threatens to result in a movable or false joint.

In Oxen.—It is not an uncommon occurrence for oxen to break a horn; the result is violent hemorrhage, which is to be stopped by fomentations with *Arnica* water. Sometimes we succeed in restoring the horn by immediately fixing it to its place, tying the animal by itself to a ring, so that it may not rub against anything, and administering internally, first, *Arnica*, then, in a little time after, *Symphytum*, alternately with *Squilla*. But, generally speaking, we cannot succeed, especially when the horn has become cold. We then envelop the stump in linen cloths soaked in *Arnica* water, which are to be renewed frequently, and we should make the animal take internally every two days a dose of *Arnica*, or one of *Symphytum*, if the bone also has been fractured. We are told that a double dose of *Squilla* has also been found very useful in such cases. The cure is effected with great facility. Oxen frequently fracture the ossa ilium, an accident which rarely occasions fatal consequences, and in which *Symphytum* should be employed, both internally and externally. If there be much heat, inflammation, and swelling, some doses of *Aconitum* and *Arnica* may be administered with advantage.

460. Emaciation.—Sometimes emaciation is the consequence of some internal disease, particularly chronic affections of the lungs or liver, and one of the constant symptoms of different morbid states; sometimes it constitutes a physiological rather than a pathological state; for very frequently the general emaciation, which may be often observed, is accompanied by no appreciable disturbance in the functions. When it depends on internal causes, which interfere with the function of nutrition, a general state of debility is at the same time seen to take place. The principal means to be employed in such cases are *Arsenicum*, *Nux vomica*, *China*, when the debility is great; *Pulsatilla* (in that affection called hungry-evil); and when the state now lasts for some time, *Tinctura sulphuris*, *Magnesia carbonica*, *Petroleum*, *Iodium*, *Lycopodium*, and *Sulphur*. Compare the article Phthisis Pulmonalis, or Marasmus, which must not be confounded with emaciation. Emaciation is also observed as a local symptom of diminution of the nervous action; it is then called *atrophy*.

Treatment.—Consult the Materia Medica for the particular indications of these medicines, and give of the selected remedy from five to ten drops, night and morning, till better; then at night only.

461. Marasmus.—Marasmus, occasionally met with in calves, and which bears some resemblance to tabes mesenterica, depends generally on an internal cause; but it is also frequently observed to follow different chronic diseases, and is always accompanied with great debility. The principal medicines for it are *Arsenicum* and *China*, taken alternately, one dose every four or five days. Advantage is also obtained from *Nux vomica*, if there be constipation; from *Pulsatilla* in case of diarrhœa; from *China* in case of worms and voracious appetite. Some doses of Sulphur are always useful to complete the treatment, more especially when the disease has existed for a considerable time. If the marasmus be connected with a general morbid state, we must seek out the remedy most fitted to this state, with the cessation of which that of the marasmus also will coincide. This latter occurrence is sometimes met with in adult animals; the animal eats, no doubt, and occasionally very much, and rumination goes on in the normal way; however, it continually wastes away; there is diarrhœa, and the evacuations exhale a very bad odor, the skin is stuck to the ribs, and the hairs gradually lose their bright appearance. *Pulsatilla* and *Arsenicum* have succeeded in some cases.

462. Anasarca.—Anasarca, a disease of considerable frequency in horses, consists in a collection of serosity in the subcutaneous cellular tissue. It often accompanies ascites or dropsy; but in many cases, also, it exists alone, in the legs, abdomen, chest, scrotum, &c.; sometimes it attacks simultaneously the principal parts of the body. That which distinguishes it from other tumefactions, is, that the skin is cold, and retains the impression of the finger. *China*, alternated with *Arsenicum*, is in this case a capital medicine; *Lycopodium* is also found very beneficial in extensive anasarca; *Pulsatilla* and *Arsenicum*, when istered internally, its strong tincture being at the same time employed externally, is useful in this case also. Amongst the other remedies which prove most useful, *Arsenicum, Baryta carbonica, Mercurius solubilis, Silicea* and *Sulphur* are the principal. *Secale cornutum*, alternately with *Arsenicum*, has produced excellent effects in a very bad case; the cure was ultimately effected by *Thuja*. I have not yet made any trials with the *Podopyoninum equorum*, to which great virtues have been attributed in latter times.

Dose.—Ten drops of the chosen remedy may be given night and morning.

464. Phthisis Pulmonalis—Consumption.—*In the Horse:* This formidable disease takes its origin chiefly when pulmonary tubercles are developed after inflammation of the lungs in horses of a middle age and strong constitution; it is not of frequent occurrence, inflammation of the lungs being in horses an acute disease which quickly passes on to its termination; but there are certain forms and breeds that appear to be disposed to phthisis, such as dull-looking, flat-sided, narrow-chested horses, that never thrive well on any kinds of food; also horses bred in lowlands and marshes, or those that are forced to breathe contaminated air; there is but little chance of success in treatment, even if taken at the early period, for generally alterations have been going on in the lungs before we are aware of the disease in question. Sometimes the animal so affected coughs very much, and voids pus by the nostrils; but more frequently the disease develops itself slowly. It is recognized chiefly by the horse, though retaining his spirits and eating well, losing rather than gaining in flesh; he has his respiration short, and labors under a constant cough, which is sometimes dry, sometimes humid; in the latter case with a discharge by the nostrils of a great quantity of foul-looking mucus. If he be much fatigued, badly covered, and exposed to frequent colds, the difficulty of breathing, cough, and nasal discharge increase rapidly; the mucus soon gives place to pus of a very bad odor; the animal becomes weak; he is more especially incapable of the least effort during foggy weather; the hair of the mane falls off, small tubercles appear on the withers, the hair is very smooth and bright, and death usually comes on in the midst of diarrhœa. Amongst the means which have been recommended, the principal are *China* (in several doses), *Lycopodium*, and especially *Stannum, Calcarea carbonica*, and *Nitrum*. *Dulcamara* is also very useful; *Pulsatilla, Silicea, Hepar sulphuris, Spongia, Carbo vegetabilis* may also be employed.

In Cattle.—Phthisis pulmonalis, a serious and almost always a chronic disease, takes place when the lungs pass into a state of suppuration, in consequence of the injudicious treatment of pneumonia. It is recognized chiefly by the animal being unthrifty, losing its hair, chiefly those of the eyebrows. By degrees it loses appetite, becomes emaciated, and gets a hollow cough, more particularly after making any exertion. Digestion is perceptibly disturbed, rumination is performed irregularly, and there is meteorization. On opening the body, tubercles are discovered, and one of the lungs is more or less destroyed by suppuration. *Nitrum* given at the commencement of the disease, which, no doubt, is then difficult of recognition, produces good effects, being employed alternately with *Sulphur*. If the phthisis has already become more developed, much good may be obtained from *Stannum* and *Phosphorus*. *Mercurius vivus* has also been proposed alternately with *Hepar sulphuris*. *Colchicum* is useful for the relief of the state of meteorization which often accompanies phthisis.

Dose.—For horses, give of the chosen remedy six drops, night and morning; when improvement begins to appear, give one dose daily for one week, then one dose every other night.

For cattle, give ten-drop doses of the selected remedy, in a similar manner to that advised for horses.

465. Palpitation of the Heart.—Horses that are overdriven may be attacked by palpitation of the heart; to some this disorder may come even from moderate exercise when they are weakly and in poor condition.

The symptoms are a dull, thumping noise proceeding from the interior of the body, and quite audible at a distance of some yards; this sound corresponds in time with the pulsations of the heart and the throbbing of the pulse. Sometimes the heart's action is so energetic as to cause a jerking or shaking over the whole body; and the flanks are raised up likewise. Palpitation of the heart is sometimes liable to be mistaken for—

466. Spasm of the Diaphragm, in which a somewhat similar sound is heard. In such cases, according to my own observations, the sound could be heard a few yards off, and was very distinct on applying the ear to the back on each side of the spine. The breathing and pulse were both increased in frequency, and the thumps did not correspond with the heart's pulsations.

Horses and dogs are most liable to palpitation of the heart.

467. Treatment.—*Aconite* will be required in violent agitation and palpitation of the heart, especially if the animal give signs of great anguish.

Arsenicum.—Palpitation of the heart coming on especially at night, and in horses of fair condition. Suitable to organic diseases of the heart, carditis, dropsy of the heart, and dilatation.

Asafœtida.—Palpitation of the heart arising from excessive physical exertions. Organic affections of the heart.

Belladonna.—Palpitation of the heart when at rest, increasing during motion, with intermitting pulse. Trembling of the heart, with great distress.

Aurum.—Palpitation of the heart with inflammation.

Graphites.—Violent throbbing about the heart; violent palpitation of the heart.

Kali carbonicum.—Frequent and violent palpitation of the heart. Frequent intermission of pulsations of the heart.

Spigelia.—Palpitation of the heart, especially in horses that have been subject to rheumatism. This is one of the most important remedies in this class of disorders. Compare Arsenicum.

Nux vomica.—Palpitation of the heart from indigestion.

Lycopodium.—Palpitation of the heart from indigestion, with flatulence, after having been wearied. Tremulous palpitation.

Stannum.—Recommended by Dr. Moore as always curing *spasm of the diaphragm.* Compare Nux vomica.

Consult the Materia Medica for further indications for these and the following remedies: Calcarea carb., Helleborus, Digitalis, Lachesis, Apis m., Natrum mur., Phosphorus, Congestion of blood to chest and palpitation, Sepia, Sulphur, and Zinc, frequent palpitation of the heart.

China should be given when there are symptoms of general debility and poor appetite.

Dose.—Give from three to ten drops for a dose, according to the size of the animal, repeating the remedy every hour in acute attacks, and giving it night and morning in chronic cases, and to prevent the return of the difficulty, which is often connected with dropsy of the heart, pericarditis, which see.

468. Enlargement of the Heart—Dilatation of the Heart.—An increase in the size of the heart is rather frequently found in animals suffering from "broken wind." Such a disease affects the animal's powers of endurance and speed; and, when the animal is overdriven may bring on hemorrhage from the lungs.

The symptoms of *enlargement* are, the action of the heart is heard and felt to be stronger than it ought to be, and extending over a larger space. In some cases the stroke of the heart against the side is very strong. The increased action dependent on enlargement is constant, unlike that found in simple palpitation. In addition, a "clacking" sound is sometimes heard.

The symptoms of *dilatation* are, loss of appetite; languor; cold legs and ears; difficulty of breathing on the least exertion; giddiness or "megrims;" small, soft, feeble, irregular pulse; feeble, tremulous action of the heart; and in advanced cases swelling of the legs, chest, and belly. Compare "Palpitation" and "Pericarditis" for the treatment of these disorders.

469. Pericarditis—Dropsy of the Heart.—This disease, which consists of inflammation of the serous investment of the heart, with quickly following effusion, is not unfrequent in all domesticated animals. It may occur as an independent affection; more usually it is a complication of rheumatism, pleurisy, and pleuro-pneumonia of cows; and it has been known to follow a punctured wound.

The symptoms are often ambiguous, and are apt to be confounded with those of pleurisy. In a fully-developed case, we find him standing still, anxious in the face, and evidently in great suffering; with his breathing much quickened and labored, and his pulse accelerated, small, hard, and sometimes irregular. Pressure on the left side, in the region of the heart, causes flinching and expression of pain. On listening at the same part we hear rubbing friction-sounds, which cease when effusion or adhesion takes place; subsequently the heart's sounds are muffled by the effusion. In unfavorable cases the breathing becomes more distressing, especially on the least movement; the pulse feebler and even imperceptible at the jaw; the eyes protruded and anxious; the legs and ears cold; dropsical swelling comes on in the legs, sheath, breast, &c., and death speedily follows.

The late Professor Dick, in his *Manual of Veterinary Science*, gives the following case: "I was lately consulted in a case of a mare which was taken unwell. She had left off feeding; her pulse was small and weak; her respiration scarcely affected; her mouth cool; her bowels regular; and her ears and legs fine, but cold. On moving her about in the stall a twitching of the hind leg of the animal was observed, as if it were affected with cramp. On applying the hand to the left side, a peculiar pulsation was felt, as if the heart were moving in a fluid. This pulsating sound was readily heard on applying the ear to the left side, and was totally distinct from the sounds produced by water in the chest. The case proved fatal, and on dissection the pericardium was found to contain four pounds of serum."

The following case, reported by Dr. Moore,* will illustrate the method of giving the homœopathic remedies in such cases, and their curative action.

April 5th. Visited a cart-horse which had been under allopathic treatment for a week, and rapidly getting worse. Symptoms: Pulse 120 per minute; violent jerking action of the heart; there is a peculiar ringing sound at every beat of the heart; the respiration is 36 per minute; little breathing can be heard in the left lung in consequence of the predominant action of the heart; the urine is voided frequently and in small quantities. This has been produced by a blister on the side. Treatment: To have ten drops of Digitalis, 1st, every three hours.

On April 26th, pulse 104 and intermittent; respiration 20; the violent jerking of the heart is almost gone; the respiratory murmur is now audible in the lower portion of the lungs, and some mucus rattles in upper part; the urine flows freely; the bowels are moved; the appetite is better, and the animal's appearance livelier. To have ten drops of *Helleborus* and of *Arsenicum*, 1st dilution, every three hours alternately.

On April 27th, pulse 95, still intermittent, but more distinct at jaw; respiration 10 per minute; the urine is profuse in quantity, and has a peculiar smell—the same as that which proceeds from the chest when opened after death from hydrothorax; in all other respects better. Continue same medicines.

On the 28th, pulse 80; from 16 to 20 of the beats in the minute are slower, the rest quicker than in health; respiration normal; appetite still improving, and better otherwise. Continue as before.

On the 29th, same, except that the pulse is fuller and softer. Substitute *Spigelia* for *Helleborus*.

On May 1st, pulse 60, full and strong; better otherwise. Continue same medicines.

On May 7th. Since last report has been steadily improving in every respect; pulse 54; appetite good; has been resting. To have *Sulphur* three times daily. On the 12th all right.

Consult, in the Materia Medica, Apis, Digitalis, Lachesis, Helleborus, Arsenicum, Lycopodium, Sulphur, and Spigelia.

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* British Journal of Homœopathy, 1858.

Give of the chosen remedy (or even two in alternation, as **Apis** and **Arsenicum**) from three to ten drops for a dose, once in three or four hours, making the interval longer as the patient improves.

470. Stings of Bees.—The sting of a bee or of a wasp is a circumstance of no consequence. But when a multitude of these insects have fallen on a horse, the pain and inflammatory swelling may go on so as to occasion the animal's death. "Blind staggers" is thus caused in horses. *Apis* then becomes a truly homœopathic remedy for this formidable disease. *Arnica* employed externally is an excellent remedy in injuries of this sort; we might derive advantage also from administering one or two doses of it internally. The external employment of the strong tincture of *Urtica urens* is a specific in such cases.

Carbolic acid lotion, quickly applied, will doubtless prove still more effectual. The raised spot, which indicates the place of the sting, may be pricked open, and the diluted acid (one-fifteenth) applied every fifteen minutes.

471. Choking.—In horses the passage of food from the mouth to the stomach may be obstructed by various causes. Horses are sometimes choked by food, such as chaff, bran, carrots, turnips, and suchlike, accumulating or sticking fast in some part of the swallow, or the canal lower down; by the food not being properly chewed and softened by admixture with saliva; and by diseases, such as inflammation, stricture, dilated pouches, in the passage itself. Balls have been known to stick in the throat, or in the lower part of the food-tube, either from being too large, or improperly administered, or from existing stricture.

When the obstruction is in the throat, the animal is in an anxious distressed state, coughs, slavers, breathes quick, seems to be choking, breaks out in sweats, and frequently retches without being relieved. Water administered, or imbibed voluntarily, returns through the nose. Wherever these symptoms are met with, the hand should be put into the mouth, and the throat explored; if any foreign body be there, it will of course be felt, and should be instantly removed.

When the obstruction is in the neck portion of the food-tube, in addition to the foregoing symptoms, a swelling will be seen in the left side of the neck; and when lower down still, in that part of the tube which lies out of sight in the chest, we find violent retching after swallowing fluids, besides most of the above symptoms, except that the choking is less urgent.

In oxen and sheep the symptoms of choking are even more urgent than in horses; much more dangerous, and much more likely to end in death. This arises in great measure from the fact that obstruction, from whatever cause, and wherever situated, puts an immediate stop to the process of cudding, and therefore of digestion, so that the food in the stomach undergoes fermentation, gases are generated, and symptoms of "hoove" come on. To the general symptoms of choking already mentioned as occurring in the horse, there are added, in the case of cattle, severe cough and retching, strong muscular contraction of the neck and belly, and violent expulsion of urine and dung.

In Dogs.—Choking in the dog arises generally from fish or other bones getting fastened in the throat, or lower down in the swallow, or from starved or greedy dogs bolting too large a mass of food. The symptoms are not so severe, as vomiting is much more easily performed in dogs than in horses and ruminants.

472. Treatment.—As soon as the nature of the case is made out, and there should be no difficulty because the symptoms speak for themselves, no time should be lost in overcoming the obstruction. In the first place, if it be due to some foreign body in the back of the mouth, or in the throat, the best plan is to open the horse's mouth, pull the tongue well out, and introduce the hand, and so remove the mass or obstructing object. At the same time, the assistant may render efficient service by compressing the throat externally and trying to loosen the obstacle. In the second place, when it lies in the food-tube beyond the reach of the hand, the swollen part at the side should be rubbed up and down with the flat hand, and such grasping pressure made with the fingers and hands as will be suggested by the intention to loosen the obstacle from where it is fixed, or to break down the mass into smaller pieces. Along with this handling, the animal should drink, or have drenched into it, some tepid water, thin gruel, or oil, in the effort to gulp which, the offending obstacle may be carried down, or in attempts at retching or vomiting, be brought up by the mouth; when this fails, and even at the first if the obstacle be large and completely immovable, the probang should be introduced at once. This may be done by carrying it down on a line with the roof of the mouth, or rather pressing it back against the upper and posterior part of the gutter, until it reaches the obstruction, the object then being, if possible, to press or push it down into the stomach. In many cases this may be very readily and easily accomplished. But when the obstruction fails to be removed by the probang, which it may not if it is a bone, instead of some mass of food, no other resource is left save to open the tube, and remove the obstruction from without. The wound should then be stitched up, and no solid food given for some time. A few doses of Nux vomica may restore the weakened digestive powers.

473. **Ranula.**—Ranula consists in obstruction and distension of the duct of one of the glands which secretes saliva, under the tongue, on one or on both sides. When large it is very troublesome.

This is similar to the tumor by which Arabian shepherds determine, in advance, the infection of rot in their sheep. (See No. 272.)

Treatment.—Open with the lancet. Give ten drops of *Mercurius* three times a day. If necessary, dress the wound with *Calendula lotion.*

474. **Quittor.**—Quittor (*Coronal Fistula*) is an abscess at the coronet resulting from injuries to the foot, such as corns, pricks in shoeing, or penetrating wounds produced by sharp bodies. In severe, or neglected cases, inflammation arises at the injured part, and matter forms, which spreads in every direction between the bone and horn, and at last appears at the coronet above the heel. The same condition of the coronet may follow severe treads, or overreaches. Before the gathering breaks, we observe a painful swelling at the coronet; when this breaks of itself, there is a discharge of matter from one or more holes. The essence of quittor consists in their being sinuses, or pipes, communicating with the original seat of injury and the surface of the skin. Such cases are usually attended with considerable pain and lameness, and, unless promptly and properly treated, lead to disease of the bone, or deformity of the foot. (See "Figure of a Horse," chapter XI.)

If the cause be corns, or penetrating wounds of the sole of the foot, the horn must be pared in such a manner as to let the pent-up matter out. Then put the foot in a pail of hot water, and afterwards in a large bran poultice. This should also be done for the swelling at the coronet, which should be opened if necessary. In bad cases the horse should not work. The best local application is *Merc. cor. lotion*, injected three times a day into the pipe at the opening on the coronet. If there is a second opening, stop it up during the injection with the point of the finger, so that the fluid may flow along the windings of the sinus.

If the foot is pricked in shoeing, or if bad shoeing has caused corns, a skilful farrier will know what to do.

475. **Abscess in the Lungs.**—As a result of pneumonia, a collection of matter is not uncommon. If a bronchial tube opens into the abscess, the matter, which is of a very offensive, stinking character, is coughed

up more or less abundantly, and gurgling sounds are heard in it on listening to the chest. Dr. Moore reports a case in which the attack was one of severe inflammation of the lungs. An abscess formed and broke into a bronchial tube, whereupon the breath became foul and offensive matter was coughed up. The animal was convalescent in thirty days. The chief medicines given were *Aconite*, *Bryonia*, and *Phosphorus*, in the early stage; and *Ammonium causticum* and *Hepar s. c.*, in the later stage. He used, after an abscess broke, a steam fumigation medicated with *Baptisia*.

Silicea will be found useful in pulmonary abscesses; especially those, called *Vomica*, which break and discharge again and again.

Dose.—Ten drops, three times a day.

476. Bleeding from the Lungs—Hæmoptysis.—Rupture of a bloodvessel in the lungs, and discharge of blood by the nose and mouth, is an occasional occurrence in the horse, almost always as the result of severe and long-continued exertion; more rarely from heart disease. A horse severely run with hounds may be fatally attacked in this manner.

In hæmoptysis the horse discharges by the nose a certain quantity of bright red, frothy blood, the escape of which is accompanied with violent cough, difficulty of breathing, and great beating in the flanks. In general, it is very dangerous, for it is always referable as a cause to some serious lesion of the substance of the lung, thereby rupturing some of the ramifications of the pulmonary artery, to a fall, wound, &c. If it come on after an external lesion, *Arnica* should be given in repeated doses, then a dose of *China*. If it depend on a disease of the lungs, we should follow the course pointed out in the articles "Pneumonia" and "Phthisis Pulmonalis;" but in the latter case, no treatment will be of any avail.

Dr. Moore relates the following interesting case: "On the 2d inst., a horse, immediately after strongly exerting himself in pulling a cart out of a clayey place, was suddenly seized with coughing and brought up a quantity of florid blood, and some ran out of his nose likewise. He continued his work up to the 6th, when he was again seized in the same way. I saw him next day. His pulse was 72 and soft; his countenance was anxious and dejected; his breathing somewhat hurried; loud rattling could be heard in the windpipe and large bronchial tubes; he shivered; and after coughing, blood was discharged. Five days afterwards, nothing ailed him. The medicines he had were *Hamamelis* and *Bryonia*, in ten-drop doses, every three hours."

In such cases, *Aconite* and *Arnica* are useful.

To prevent a return of the hæmoptysis, and cure the predisposition to this disorder, give, on alternate mornings, six-drop doses of *China* and *Sulphur*. It should be borne in mind that a horse or other animal that has once bled at the lungs will be very apt to do so again on like provocation from violent exertion; and hence he must be used more carefully. Such a horse, if allowed to run at full speed, may rupture a bloodvessel of such size as to be destroyed at once.

477. Hæmorrhoids—Piles.—In horses, oxen, &c., piles are small tumors, consisting of enlarged veins at the end of the rectum. They occur less frequently in the horse than in oxen and sheep. In the latter animals, we observe stiffness in the hind legs and disinclination to move. The fæces are tinged with blood. The secretion of milk is diminished and cudding arrested. An examination makes known the existence of tumors in the bowel. When these tumors burst, congealed blood is discharged. In most cases there are symptoms of feverishness, such as quick pulse, hot mouth, loss of appetite, dry snout, &c.

In dogs, piles are either internal or external; the former, when seated within the external sphincter of the anus; the latter, when found outside that muscle. Both may coexist in the same animal.

Want of exercise, the use of purgatives, constipation, stimulating food, straining in the act of defecation, diseases of the liver interrupting the circulation of the blood and producing distension in the hæmorrhoidal veins, are the most frequent causes of piles. The dog's rectum is peculiarly exposed to disease; first, because from his natural constipated habit of body he strains forcibly in the act of voiding fæces; and secondly, because he swallows many things that are of an indigestible nature, and that for that reason pass into the rectum and set up local irritation or inflict local injury.

Treatment.—*Aconite*, indicated where the animal is off his feed, restless, and feverish; when the part is hot and tender to the touch; and when inflammation arises in the piles, especially if it extend, as is occasionally the case, to a large part of the rectum.

Nux vomica, given at night, and **Sulphur** in the morning, will cure cases, almost invariably, which depend on indigestion, hepatic torpidity, and the consequent constipation.

Mercurius will be required when, besides costiveness, there is a discharge of slimy mucus, alone, or mixed with blood; and when, in the dog, ulcers remain after the inflamed pile bursts.

Hepar sulph. is of great service when matter is forming.

Dose.—From three to ten drops, thrice daily. Bathe the parts with soft, warm water, keep clean, and give only soft food till the cure is complete.

478. Purpura Hæmorrhagica.—*In Horses:* This disease depends on some unascertained alteration in the blood, or bloodvessels, or both, which allows the blood to escape into the structure of the skin, into the tissues under the skin, and into internal organs, and cavities, and ducts.

The causes are believed to be those which are calculated to lower vital power, or to impair the process of bloodmaking; such as close, ill-ventilated, damp stables; overwork; bad, or scanty food, &c. In many cases, if not in all, the symptoms of purpura have been preceded, at a longer or shorter period, by a catarrhal affection.

The pulse ranges about sixty, and is full; the breathing about twenty per minute. Swellings of various size and irregular outline, and consisting of effused blood, suddenly appear under or in the skin, in different parts of the body, especially the legs. The swelling of the legs about the hocks and knees is often enormous, and ends abruptly at the stifle and elbow-joints. The lips and nostrils are much swollen, tense, and shining. The openings of the nose are often so much narrowed as to cause some difficulty of breathing. On examining the nasal membrane, it is found very red and studded with purple spots, which vary much in size, from a shilling downwards.

The inside of the lips is likewise covered with similar spots. If one of them be pricked, fluid blood exudes.

Usually, in a day or two, the pulse becomes weaker, the urine high-colored, and further extravasations occur, unless the attack takes a favorable turn. The swellings, which at first have a well-defined margin, which is gradually lost in the adjacent skin, extend to the breast, flank, belly, quarter, &c.; the membrane of the eye is bloodshot; a dark, bloody fluid, alone or mixed with matter, flows from the nose; the nasal membrane becomes black, and the former spots slough off, and the tissue is seen hanging in shreds. The patches of swelling on some part of the body become cold, hard as a board, insensible to feeling—die, in fact, and shortly slough off, leaving raw, unhealthy sores. Other patches, especially those under the belly, exude a fluid, which may be seen hanging in drops on the hair. There is also in severe cases a discharge of blood by the urine, either mixed up with the urine, or passed in small clots. In addition, the animal is weak, eats little or nothing, and cannot move his legs from the swelling preventing bending of the joints.

Dr. James Moore, from whom we quote this account, says: "I have tried several medicines, but now I never use any other than *Kali bichromicum*, which I regard in the light of a specific, from its remarkable power over this disease." The following cases reported by Dr. Moore, will show the process of this treatment.

Case I.—This horse had a severe attack of bronchitis on the 16th of September, and resumed work on the 1st of October, since which time he has been well and improving in condition until yesterday, the 22d, when he was observed by the horse-keeper to be off his food, and looking dull and heavy. Now, pulse 60, full and strong; respiration 20, fore legs, particularly the left one, swollen up to the knees, or rather higher, and in consequence of this swelling he moves with very great difficulty; the Schneiderian membrane is beautifully spotted with small purple spots about the size of a pin's head.

Treatment.—To have *Aconite*, ten drops, first dilution, every three hours.

24th. Much better; pulse 44, and of the usual character; respiration 14; the swelling is now up to the chest, but decreasing a little on the legs; there is a considerable and painful swelling on the belly, near the left flank; the purple spots on the Schneiderian membrane are much fainter; appetite good; to have *Kali bichrom.*, ten drops, first dilution, every three hours.

25th. The swelling on the right leg is nearly gone, and that on the left is somewhat diminished; also that on the belly; appetite good; pulse and respiration same as yesterday. Continue medicine.

26th. Considerable amendment; pulse 40; respiration 10; swelling of the right leg entirely gone; that on the left is considerably diminished, and the swelling on the belly is gradually disappearing. Continue medicine three times a day.

28th Pulse and respiration normal; there is a little swelling on the left knee, and on the side of the abdomen; otherwise the horse is well. Continue medicine night and morning.

30th. Well, and gone to work.

Case II.—On August 13th, 1861, Mr. W. came for me to go and see one of his horses, which was unwell. The horse has been ill for four days, but had previously cold and cough before the swelling came on.

Symptoms.—Pulse 64, and full; respiration 14 per minute; the nasal membranes are thickly studded with scarlet spots, from the size of a pin's head to that of a shilling, and the alæ are somewhat swollen; the hind legs are swollen up to the patella, where the swelling terminates abruptly; the sheath is also enormously swollen, and so are the fore legs up to the chest, where the swelling terminates abruptly; the urine is scanty and high-colored; fæces contain more mucus than usual; appetite fair.

Treatment.—To have *Kali bichromicum*, ten drops, first dilution, three times a day.

This case steadily improved under the use of this remedy. At the end of three weeks from the commencement of the treatment he went to light work, and in another week went to his regular job.

Acidum sulphuricum may be employed in this affection, in case the Kali bich., so highly praised by Dr. Moore, should prove insufficient. Consult the section on Materia Medica.

479. Leucorrhœa—Discharge from the Vagina.—A discharge of mucus, either limpid, milky, or curdy, from the female genitals, may result from chronic inflammation of the womb, or from the local irritation of the male organ, especially when this latter is itself inflamed. This disorder is called *leucorrhœa*, or the whites. Sometimes the discharge appears like matter, and is attended with sympathetic irritation of the bladder, as shown by scanty and painful urination.

480. Treatment—*Arnica* lotion may be employed in cases which seem to result from mechanical injuries; the external parts may be bathed, and with a suitable syringe or enema-pipe, the same lotion may be applied to the internal and inflamed surfaces. Ten drops of the dilution may at the same time be given three times a day.

Calendula lotion, and dilution, may be employed in the same way, when the disorder results from wounds.

Hydrastis, lotion and dilution, will remove the difficulty when it tends to become chronic; or seems to result from weakness. Use in the same manner as advised for Arnica.

Cantharis.—Indicated when the bladder is involved, and the urine is passed with pain and difficulty. Give five drops, once in three hours, till relief is obtained.

Mercurius, in similar doses, may be given when the parts are inflamed and tender, and the discharge thick and mattery.

481. Inflammation of the Foreskin.—The prepuce or foreskin of the male is sometimes subjected to inflammation, with mucous or purulent discharge, corresponding to that just described in the genitals of the female.

The treatment is similar, with the same medicines given internally, and lotions of the same externally applied.

482. Inflammation of the Foreskin (continued).—In addition to the brief mention of inflammation of the foreskin, or prepuce, on the preceding page, it may be stated that this part may become inflamed and give forth a mattery or purulent discharge, corresponding to leucorrhœa in cows; and arising from direct contact with this latter secretion in sexual intercourse in horses.

On examination, the sheath and penis are found red and swollen, and the foreskin covered with matter. Great pain attends the act of urinating.

In some cases, the canal is the seat of inflammation, and then the disease would be called "clap."

A similar state of things is met with in dogs. The part is red, painful, and swollen, and the discharge copious and mattery. Small ulcers sometimes may be observed on the mucous membrane—these by joining together form a large ulcerated surface, from which, in bad cases, warty or fungoid growths spring up. In dogs, it is connected with uncleanness, mange, disordered stomach, gross condition, &c.

For treatment, in addition to what is said on page 535, see that advised for gonorrhœa, or "clap," in the succeeding section.

483. Gonorrhœa.—This disease is seen generally in stallions and mares after sexual intercourse, and it is sometimes the consequence of an infection. In the stallion it presents itself under the appearance of swelling of the glans penis, ulcers in the penis, and swelling of the testicles and inguinal glands—symptoms to which are added, after some time, a discharge from the nose and tumefaction of the glands, as in glanders. In the mare there are found to be swelling and itching in the vulva and vagina; thus the formation of small vesicles, which are followed by corroding ulcers. The animals of both sexes, so affected, have a stiff walk, lose their sprightliness, and gradually waste away; death takes place with putrid fever, or, in rare cases, in apoplexy.

Treatment.—Aconite will be required in the acute and violent form of this inflammation.

Dose.—From three to five or six drops, once in three or four hours, according to the size of the animal, and the severity of the case.

Cantharis will usually be needed after the violence of the symptoms has been abated by Aconite.

Dose, three to five drops, once in four hours.

Mercurius will generally suffice to cure the disease, after the action of the two remedies just mentioned.

Arsenicum, Thuja, and **Nitric acid** may be needed in particular cases. For special indications for these and other remedies, see Materia Medica. Also see the indications for medicines, set down on a preceding page under the head of Leucorrhœa; and consult the articles on Dysuria, and Retention of Urine, pages 397, 408, 409, and 543–45.

484. Grooming.—"When a horse comes in all wet with perspiration," said an English groom to an American hostler, "you let him stand in the stable and dry with all the dirt on. In England we take the horse as he comes in from a drive, and sprinkle blood-warm water all over him, from his head to his feet. Then we scrape him down and blanket him, rubbing his legs and face dry. Thus in an hour he is clean and dry, and ready to take a good feed; while with your way, he will stand and swelter for hours, and finally dry, sticky and dirty. Our horses never founder and never take cold. We never use a curry-comb. You scratch your horses too hard. The only care necessary is to have the water not very cold, then bathe them instantly, while you are rubbing their legs."

The thorough cleaning of the skin of the horse is an operation requiring both skill and hard labor. To make this labor effective, and to produce the greatest effect with the least expenditure of power and in the shortest time, the groom should aid his muscular strength with his weight. He should therefore stand well away from the horse, and lean his weight on the brush, which thus used will penetrate the coat more effectually and with less exertion to the man, than if worked only by his muscular strength.

The principal working of the brush should follow the natural direction of the hair. It will not penetrate it as deeply and thoroughly, when worked against it, as with it. To remove, however, external dirt or sweat, which may have caked in the coat, it may sometimes be necessary to brush against the hair.

485. Fatigue.—After great fatigue, severe running, &c., there frequently come on in horses symptoms which are anything but insignificant, and which may endanger the horse's life. One of the most usual consequences of excessive weariness is loss of appetite. The animal, when oats are presented to him, does not notice them, and at most eats only a little hay. *Nux vomica* tends to restore the appetite. We should have recourse to the same means when a horse, accustomed to slight work, does not lie down to rest after some additional labor has been exacted from him, but remains with his head down, and sleeps in the erect posture without attempting to eat. If the animal have been driven beyond the ordinary time of his work, so that the symptoms seem attributable to voracious appetite, we should in such case have recourse to *Aconitum* and *Veratrum album*, and when at each movement there is heard a plaintive moan, *Rhus toxicodendron* should be administered. *Cannabis* is also a valuable remedy in cases of great fatigue. *Opium* is useful, when, after being very much fatigued, the horse remains dull, with his head hanging, pulse slow and weak, the fatigue having occasioned some disturbance in his digestion. If, on the contrary, the pulse is quick and hard, and the animal is in a state of great excitement, *Aconitum* should be given. *Arnica* is useful in case of palsy of the legs from excessive fatigue; *Rhus toxicodendron*, in swelling of the legs; *Arsenicum*, when the legs are stiff. After fatigue from severe work, such as hunting, the animals when distressed should not be allowed too much food; on the contrary, but little, and that easy of digestion, such as bran and mash, with steamed carrots or turnips, and about two quarts of oats, soaked, mixed together, and some sweet hay, well shaken up and sprinkled with water; the drink should consist of boiled oatmeal and warm water, the digestive organs being from over-exertion in a debilitated state.

The majority of hunters, when excessively tired, lose their appetite; thick gruel should then be administered to them in small quantities.

486. **Overwork.**—Amaurosis, cataract, and even total blindness in both eyes have been known to result from severe overwork, especially from overdriving young horses. This mischief, by the time it has made its appearance, is of course irreparable; but when from such excess of exercise this result is apprehended, it may be prevented by perfect rest, a light diet (gruel and bran-mash), and giving *Nux vomica* in doses of twelve drops once in three or four hours, according to the urgency of the case: the medicine may be dropped upon a little mass of wet meal, and so conveyed to the animal's mouth without danger of loss.

487. **Founder.**—*Chest-founder*, as a form of rheumatism involving the shoulder, has been treated on page 479. *Foot-founder*, as an acute inflammation of the feet of horses, cattle, sheep, and dogs, has been considered on pages 429–433. But the great importance and very common occurrence of the disorder popularly termed founder, lead us to extract a more full description of it in its several varieties, and with the appropriate homœopathic remedies, from Gunther's excellent work.

Founder in the Horse, which consists in an inflammation of the tendons, muscles, articular ligaments, and even of the extremities of the bones, and of the laminæ of the foot, ordinarily attacks the fore feet: rarely, and only in the severest cases, the hind feet are affected. It is observed particularly in horses that have been fed on indigestible and heating food, especially when they do not take sufficient exercise. Another cause is excessive fatigue, and sudden exposure to cold. It frequently supervenes on hard riding, or driving; and more especially if the horse has had a purgative administered, from which cause I recollect three well-marked cases; it is, at times, not the primary, but the secondary affection, by metastasis of inflammation of some vital organ, particularly the lungs and intestines. There are also accounts where it has supervened from the stress on the laminæ of the feet of horses, having stood on board a ship during long voyages. Founder is generally accompanied with fever; the animal is melancholy, he refuses to eat, is stiff in his movements, frequently he cannot raise his limbs without evincing acute pain, he trails his feet along with considerable difficulty, so that one cannot readily make him go forwards, whilst it is still more difficult to back him. In the stable, horses so affected approximate the four feet to each other, and there is no little difficulty in making them relinquish this attitude. The treatment varies with the cause.

1. *Founder by Sudden Exposure to Cold.—Aconitum,* when there is paralysis, with inflammatory symptoms; *Arsenicum,* when febrile shiverings come on after the animal has taken cold drink; *Bryonia,* a capital remedy in all affections occasioned by cold, and one that is specific in paralysis of the legs, provided it be employed in time; *Veratrum,* in cold after violent exercise; *Staphysagria,* when, independently of the other symptoms, there is a trembling of the body, and the feet rise alternately; *Conium,* in paralysis of the knees; *Rhus toxicodendron,* when there are severe pains in the feet; *Arsenicum,* when the sole is painful; *Aconitum* (alternately with *Nux vomica*), *Petroleum,* and *Thuja,* when the affection is of long standing.

2. *Founder by Excess of Fatigue.—Aconitum,* if the horse stops quite short, makes deep inspirations, has his breath hot, and pulse accelerated; *Opium,* when he holds the head low, and the legs widely separated and the pulse is weak; *Coffea cruda,* in the same case, if *Opium* has failed; *Rhus toxicodendron,* an excellent remedy when the feet are painful; *Arnica,* in rigidity of the legs, with inflammation of the sensitive part of the feet; *Nux vomica,* when the abdomen is squeezed up, and the animal refuses to eat; *China,* when the feet are cold. If a little delay has been made, and inflammation of the foot has already taken place, and in consequence a violent fever, some doses of *Aconitum*

are to be administered without delay, which should be followed by *Rhus toxicodendron*, and the hoofs are to be enveloped in cloths soaked in *Arnica-water*.

3. *Founder from Excess of Food.*—*Aconitum* is the remedy for this. If signs of inflammation are observed, a dose of *Aconitum* is immediately prescribed, and after some hours, *Arsenicum* is to be employed. *Arnica* may be administered in case of rigidity of the limbs and inflammation of the feet; *Bryonia*, in doses frequently repeated in hydrarthrus; *Nux vomica*, when there is paralysis, abdomen tucked up, and an aversion to food. The symptoms sometimes warrant us in having recourse to the means indicated in the preceding paragraphs.

In *Chronic Founder*, some doses of *Sulphur* must be prescribed; the remedies indicated by the exciting cause will then act better and more expeditiously. When the disease has been wholly neglected, and alteration of structure has already supervened in the feet, we can scarcely any longer reckon on a favorable issue; however, even then we have often seen *Arsenicum*, *Arnica*, and *Petroleum* produce a perceptible improvement.

Founder in the Dog.—The dog is said to be foundered, when after having been subjected to cold when much heated (as in violent running in hunting), he becomes all at once so stiff and rigid that oftentimes he cannot stir. The remedies are *Aconitum*, *Arnica*, and *Bryonia*, and when the affection has been preceded by great fatigue, *Rhus toxicodendron*.

Founder in the Hog.—The ordinary cause of this disease is the influence of cold or violent exercise; but sometimes it is owing to excess of food. It is recognized by muscular rigidity so great that the animal can scarcely drag itself along. The back, too, is rigid, and the mouth opens with difficulty. The animal has little appetite, and does not leave its sty willingly. A few doses of *Aconitum*, and then *Bryonia*, are the principal remedies. Benefit has been derived also from *Belladonna*, *Chamomilla*, *Dulcamara*, and *Opium*. *Nux vomica* has produced very excellent effects in certain cases.

488. Fistulas, Fistulous Openings.—Fistulous openings may appear on the *withers*, see page 195, or on the *face*. In addition to these forms of sinuous ulceration, there may be *dental fistula*, which is seated at the carious root of a tooth, and terminates almost always at the inferior edge of the lower jaw; and *salivary fistula*, which commences in the place where the canal passes over the edge of the jaw, and continually gives discharge to a considerable quantity of clear and limpid saliva. *Venous fistula* is sometimes seen after badly performed bleeding. *Fistula in ano* may be caused by mechanical injuries; and *scrotal fistula* may follow castration when the epididymis has not been completely removed.

489. **Treatment.**—*Belladonna* has been recommended for salivary fistula.

Pulsatilla is by Gunther affirmed to be a principal remedy in all these species of fistula and fistulous ulcers.

Silicea, in the horse, as in the human subject, is undoubtedly the most important remedy for fistulous openings.

Hydrastis, given in the form of a mild injection, will be found useful in stimulating the indolent surfaces in some cases, and in removing the foul secretions which may tend to accumulate.

Antimonium crudum, Calcarea carb., Lycopodium, Carbo veg., Phosphorus, Staphysagria, and **Sulphur** may be consulted, and under their influence, when indicated by particular conditions, or by the aid of Silicea, the general health may be improved, and the disposition to the formation of such ulcerations entirely remedied. In this, as in all other forms of *local disease,* the general condition of the whole system, and all particular deviations from health, must be carefully considered in prescribing.

490. **Crib-Biting—Wind-Sucking.**—The destructive habit indulged in by some horses of biting their cribs, diminishes their value, and tends to increase with age. This habit is often the result of imitating similar actions in other horses; sometimes, however, it is due to irritability or acidity of the stomach. And as it is usually accompanied with *wind-sucking,* the tone of the stomach is still farther weakened, and this in turn may result in indigestion and attacks of colic. A crib-biting horse is not necessarily unsound, not unless he is otherwise affected; but he cannot be said to be "free from vice." Such horses, especially when quite young, will sometimes tear their coverings into pieces with their teeth. Many horses bite and gnaw upon every accessible object about their manger; but a regular *crib-biter* fastens his front teeth upon the manger, curves his neck, and sucks in air with a peculiar noise.

491. **A Wind-Sucker** presses his lips against some hard body, brings his feet together, arches his neck, and swallows air, without fix-

ing his teeth. After either of these two performances, the belly l
comes enlarged and drummy.

492. Treatment.—Various means have been proposed for breaki
horses of these injurious habits; whether both appear, or only one, t
same treatment may be adopted. Some cover the edges of the ma
ger with nails and sheet iron; but this may result in breaking the an
mals' teeth, rather than in breaking them of the practice of crib-bitin
Others have tried saturating the woodwork with tincture of *Aloes*,
even with coal oil, with the result of rendering the wood so disagree
ble in taste to the horse that he will quickly let it alone; the smell
the kerosene might be objectionable, but this would last but for
short time, while the wood continues saturated, and consequently tast
badly for a longer period.

But a better method of procedure consists in arranging for the edg
of the manger, *a smooth, hardwood roller*, which will revolve on th
least attempt of the horse to fix his teeth upon it. The animal soo
gets tired of futile attempts to bite, and the habit disappears. Th
method, which is at once easy to adopt and perfectly harmless, is equall
suitable for wind-sucking horses.

Nux vomica will prove a valuable help in remedying the gastric c
enteric irritation which usually accompanies crib-biting or wind-suck
ing; this medicine would also remove the weakness of the stomac
and flatulence caused by such practices.

Sulphur may also be indicated in similar conditions. A dose—te
drops—of one or the other of these remedies may be given every nigh
in conjunction with the mechanical means above recommended.

Arsenicum may be preferable, in some cases, instead of Sulphur; giv
twelve drops every morning, in a little meal.

493. Balky Horse.—A balky horse stops and obstinately stand
still after going a very short distance, or he may refuse to start in th
first place; he may rush sideways, on either side; run backwards unti
his progress is arrested by some obstacle; or he may rear up persistently
to the imminent danger of coming down in the carriage; he may kick
for variety's sake; or he may go through all these manœuvres in th
course of a single expedition.

A balky horse is a horse that has been abused, overworked, over-
loaded, and then beaten to compel him to do what he feels unable to do
Such a horse has doubtless been owned and *developed* by a cruel man
one quick to anger and of violent passions. Such men we have seen

who attempt to persuade these unfortunate animals to go by disciplining them with a fence-rail. But the favorite method of treating a bad case of this kind, adopted by other horsemen, is to knock the animal down at once with the butt end of a loaded whipstock, and then light a fire under him to make him get up. At first sight this latter method of reasoning with horses—*moral suasion* is the term applied to the procedure, principally because it is an immoral attempt at compulsion—might seem to be homœopathic; but the dose is too large, and therefore only adds to the original disease. If resounding blows, cursing, swearing, and all manner of brutality could have cured such cases, there would have been none left for the milder means which alone we can recommend. Violence and anger on the owner's part do but serve to confirm the poor beast in his obstinacy, or to frighten him till he has no longer any sense; like a schoolboy overawed at school, who trembles so with fear of the teacher that he can neither learn nor remember. In most cases *balking* in the horse is a mental, or rather we might say, a moral disease; a disease of the *will*. And, as first stated, corresponding wilfulness, obstinacy, and intense passion on the part of the teamster but serve to confirm the animal in his obstinacy, and render him absolutely intractable.

Treatment.—Balky horses are to be treated only by the law of kindness; and in this manner we have seen most desperate cases of this sort permanently cured. Patience, perseverance and kind management, will do nearly all that can be done towards reforming these trying cases; but this method may be promoted by a few doses of Sulphur given at night. By bad education and violence, horses are taught to become balkers; by good education, kindness and gentleness, horses may in this respect be taught to cease to do evil, and may learn to do well.

494. Retention of Urine—Strangury.—*In Horses:* In addition to the brief notice of retention of urine given on page 397, we take advantage of the second edition, to present a fuller description and treatment of this dangerous and critical affection. Suppression of the secretion of urine is a result of severe inflammation of the kidneys (see page 393); or, instead of total suppression, there may be at the same time a great diminution of the urinary secretion, and difficult passing what little is secreted. These symptoms are often caused by the administration of powerful diuretics, such as Saltpetre and Nitre. Apparent retention, and real, complete or partial suppression of urine, may be distinguished from simple retention of urine in the bladder, by the fever which invariably accompanies nephritis; by the animal keeping his legs separated from each other, and by his frequent efforts to pass urine when the examination of the bladder through the bowel shows it to be empty. In retention of urine, on the contrary, the bladder may be enormously distended; and that it does contain urine, when this is not so obvious externally, may readily be ascertained by introducing the hand into the rectum. The principal causes of this trouble are: mechanical injuries, blows, &c.; paralysis of the bladder, or spasm of its neck; stones (calculi) lying at the neck of the bladder; enlarged prostate; stones or worms in the canal; concretions in, or contractions of this canal; overheating and overdriving, especially in hot weather. In addition to the external distension of the bladder, and to the discovery of its containing urine by manual examination, the retention of urine may also be determined in suspected cases by the following symptoms: There is pain on pressing over the bladder in the pubic region and dulness when percussing it; the animal lies, and shifts about from one place to another; when made to walk he does so unwillingly, with back arched and straggling gait; there are frequent strong, straining, distressing efforts to urinate, but inability to do so, these efforts gradually abating as the bladder loses its sensibility; and in the far-advanced cases, not only is there inability to pass urine, *retention of urine*, but no power to hold it, and the fluid slowly dribbles away; *incontinence of urine* from loss of tone of the bladder. A careful attention to all the circumstances of the case is necessary in order to distinguish a *retention of urine* from genuine *colic*, which may be attended with frequent and comparatively ineffectual efforts to urinate and scanty discharge of urine. In such cases the strangury results from sympathy, and can only be remedied by removing the cause.

In the Dog, retention of urine is not uncommon: it may result from paralysis of the bladder, as when a cleanly pet is shut up in a room and cannot get out to relieve itself; or it may be occasioned by disease and injuries of the head and spine; by nephritis; by blows on the loins; by constitutional debility from any cause, such as distemper, and may accompany paralysis of the hind legs. Stones in the bladder (calculi) or in the canal for the passage of urine, have been known to cause retention in dogs. If not relieved the overdistended bladder may burst, the urine flow into the cavity of the abdomen and fatal (peritoneal) inflammation result.

In Oxen, retention of urine is sometimes observed; sometimes the urine is discharged only in part and after great efforts; sometimes the animal cannot pass a single drop, though he often sets himself in the position to do so, and presents all the symptoms of cystitis.

Strangury, Dysuria, Difficulty of Urinating, briefly treated on pages 408 and 409, may be recalled to view in this connection, since it is but a milder form of retention; but may result, in addition to other and above-stated causes, from taking cold, or getting chilled when perspiring or overheated. The animal feels acute pains when attempting to urinate; the urine passed is small in quantity, sometimes clear, sometimes red, or even bloody, especially after blows. The horse kicks and seems disposed to lie down, but seldom does so; he shakes his tail, shows great restlessness in his hind-quarters, and makes, with groans, ineffectual efforts to empty the bladder.

495. **Treatment.**—In urgent cases, the immediate danger may be overcome by emptying the bladder by means of the catheter, which can readily be introduced in the horse, and in all female animals. When the retention of urine depends on stone, an operation is required. The following medicines will be found useful as indicated briefly below, and more at length in the chapter on Materia Medica, which should be consulted for fuller details of symptoms.

Aconite.—Ten drops may be given in severe cases, every fifteen minutes, particularly when the difficulty has arisen in consequence of chill, or of overheating, and the danger is imminent. This remedy is almost always suitable to begin the treatment of such cases, and in many instances will prove entirely sufficient.

Cantharis may be given in a similar dose, once in half an hour, when Aconite fails to relieve, or affords but partial relief. This remedy is said to have proved invariably successful in treating retention of urine in oxen.

Hyoscyamus may be exhibited in a similar manner and dose to Cantharis, if both Aconite and Cantharis prove ineffectual, after having been given as above advised for an hour or two.

Arnica, given in ten-drop doses once an hour, will be useful in cases of retention of urine resulting from blows or other mechanical injuries; the preceding remedies may afterwards be needed to complete the cure.

Belladonna will often prove effectual when the retention results from spasm of the neck of the bladder.

Nux vomica will be found indispensable when the retention arises from paralysis of the bladder, from constitutional debility, from drugs (powerful diuretics), or from constipated bowels. In this latter case the cause should be removed by injections of warm water thrown into the rectum.

Camphor, in doses of from five to ten drops of the tincture, according to the size of the animal, should be given every fifteen or thirty minutes, when the strangury or retention is caused (as is sometimes the case) by fly-blisters.

Apis, Cannabis, Capsicum, Colchicum, Lycopodium, and **Pulsatilla,** have also been found useful in certain cases, where indicated by their individual symptoms for *retention of urine.*

In addition to the remedies mentioned on pages 398 and 408, consult *Acid phosph., Acidum nitri., Staphysagria, Ipecac.,* and *Sulphur,* for *strangury.*

Warm fomentations applied to the region of the bladder may aid the action of the medicines in relieving the patient.

Injections of warm water into the rectum will often be found useful, especially in relaxing spasm of the bladder, or of its neck.

Warm baths sometimes prove efficacious for small animals, such as lapdogs.

Compare "Cystitis," "Inflammation of Neck of the Bladder," and "Spasm of the Bladder," pages 396–398.

496. Purpura Hæmorrhagica.—In addition to the remedies mentioned on pages 534–535, consult also *Lachesis,* sufferings from loss of blood, and where there is great tenderness of the flesh to the touch; *Arsenicum,* where there are œdematous or dropsical appearances; *Ledum,* under similar circumstances, where there may also have been rheumatic affections or mechanical injuries, and where heat or warmth aggravates the symptoms; *Phosphorus,* where the slightest wounds bleed much; *Arnica,* red, blue and yellow spots, like bruises, and resulting from bruises and contusions, with painful debility and tremulousness; *Bryonia,* purpura hæmorrhagica with jaundiced condition (as shown by yellowness of the whites of the eyes), or in rheumatic conditions, with aggravation from the least movement. *Oxalic acid,* which may be procured at the shops, may be resorted to in desperate cases which do not yield to any of the abovementioned remedies; one grain of this acid may be dissolved in a pint of soft water, mixed thoroughly by shaking, and two tablespoonfuls given every two hours, till improvement sets in; then once in three or four hours.

Of the remedies recommended above, ten drops may be given for a dose once in four hours; these drops should be thoroughly mixed in one-half a pint of water, and the whole poured into the animal's mouth.

497. Influenza, or Epizootic of 1874.—In January and February, 1874, appeared an epidemic among the horses belonging to the several horse-car and stage lines in the city of New York, similar to the epizootic of the preceding year; but not attended with the like fatal results.

A disease of the same nature raged among the horses in 1852, spreading consternation among the owners, and causing considerable inconvenience; but it is believed that no deaths resulted from it. The first symptoms of the disease are the refusal to eat, the legs swell to a considerable size, water flows copiously from the eyes, and a fluid runs from the nostrils. The only name given to it is "pink-eye," from the color of the eye of the diseased horse. The attention of the superintendent of the Third Avenue Railroad was called to it about three weeks ago by one of the proprietors of the Ninth Avenue Stage Line, since which time about three hundred horses of the Third Avenue Line have been prostrated with the disease, but have recovered, in every instance, after an illness of two or three days, when they appeared to feel more lively than before. Between forty and fifty are suffering from it at the present time, February 17th.

The treatment adopted is to withdraw the horses from work as soon as they refuse to eat, and put them on a simple diet of long hay and a fodder of bran.

Aconite, Belladonna, and **Arsenicum,** have proved very promptly curative of this form of epidemic influenza. For particular indications, see pages 211–216,—Treatment of the Horse Distemper of 1872.

498. Rat's Tail.—According to Gunther, "the disease called *rat's tail* is said to exist when the base of the tail is denuded of hair by reason of friction, the animal frequently rubbing his tail against the sides of his stall to lessen the irritation." An itching humor, no doubt, is the cause of the mischief in many instances. In other cases the tail may be gradually stripped of its natural drapery by roughly putting on the crupper, especially in animals that are a little obstinate about allowing the tail to be raised on such occasions. Totally dispensing with the crupper for a season will much facilitate the removal of the difficulty. Some breeds seem to incline to the loss of the mane, and of the long hair of the tail, such as some of those claimed to have Arabian blood.

Treatment.—*Sulphur ointment,* well rubbed in twice a day, will often remove the trouble, by clearing away an itching eruption which, whether visible or invisible, causes the incessant rubbing on the part of the beast, or even *makes the hair fall out* of its own accord.

Sulphur tincture.—Ten drops night and morning may be given at the same time with the use of the ointment.

Graphites may be used, in similar doses, if the tail seems affected with a moist scurfy eruption.

Mercurius may be given after Graphites, in like doses.

Rhus toxicodendron may be resorted to if the above remedies fail.

Staphysagria.—Gunther reports having more than once cured such cases with this remedy.

499. Chapped Teats.—In cows, or ewes, this trouble may make its appearance while giving suck. A few doses of Sulphur or of Arsenicum, according to the accompanying symptoms, will do good, giving a dose night and morning. Then bathing the sore parts with dilute Sulphurous Acid will usually heal them up. In obstinate cases, the fluid extract of Hamamelis, or the tincture of the same diluted with nine times the amount of water, will prove effectual. And the Hamamelis might be given at first, as being less liable to irritate the nursling's mouth; that known as *Pond's Extract* is good.

500. Pneumonia in a Cow—Case.—From the *London Morning Advertiser* for July 21, 1865, we extract the following remarkable case of a cow cured of "inflammation and congestion of the lungs," by Dr. D. Wilson, one of the most eminent homœopathic physicians in London. The account is given in the Doctor's own words, and is doubly interesting, as showing what can be done by our remedies (even in the higher potencies) in the most desperate cases, and how great an advantage may accrue to Homœopathy by a physician's being willing to apply to the *dumb beasts* of his friends, a little of the scientific knowledge and practical skill which are always at the service of their owners; for this case is well known to have drawn great attention to Homœopathy, and to have given a mighty impetus to its practice among domestic animals.

"During my visits to a friend suffering from pulmonary hemorrhage, near Iver, Bucks, I was asked if I could advise a neighboring farmer concerning the sudden illness of a valuable Guernsey cow, which had calved on the morning of the previous day (Saturday), June 3, 1865:

"Independent of a great fondness for animals, the deep scientific interest and instruction attaching to the study of comparative pathology enlisted, without delay, my services on behalf of the poor animal. On being conducted by a gentleman to the paddock where the cow stood with her calf by her side, I found the farmer, Mr. Goff, Mr. Lamb, (the owner of the cow), the veterinary surgeon from Uxbridge, and an old farmer who had seen much illness in animals, all watching the case, the nature of which was a puzzle to all present. I was informed by Mr. Goff—a very intelligent man, who has, in the brief experience of this cow's illness, become, with moderate instruction, a wonderfully expert auscultator—that he left the animal apparently well when he went to church at eleven o'clock, but on his return, between one and two o'clock P.M., he found her unable to walk without a shaking of her limbs, and giving way of her joints, as if she would fall. Believing the illness to be milk fever, Aconite and Belladonna had been administered frequently, with no beneficial result. The cow could scarcely move a step without appearing as if she would fall. Her injected eyes had a glassy, dull expression of some serious illness. The milk was suppressed, neither had there been for some considerable time any signs of intestinal or urinary function. On applying my ear over the cow's ribs, I soon discovered her disease to be a severe attack of inflammation and congestion of the lungs. Her condition was one of great danger, for which I recommended Phosphorus. Mr. Goff tended her all night, scrupulously giving the medicine every two hours. In the early morning, I was asked to look at the animal 'before she died.' On visiting her, in company with another gentleman, I found her lying on her right side under a shed, where she had been for some hours, unable to rise. Her neck was stretched out, and on the left side of it there was a large globular swelling, such as may be observed in large fleshy muscles when drawn up in severe cramp. Her breathing was short; her eyelids, when raised by the finger, remained in that position until they slowly and imperfectly recovered their former position. This was a marked proof of exhausted vitality, and the rapidity with which life was ebbing. While making a minute and careful examination into the state of her respiration, the cow gave a distressed moan, as if dying, when I observed a peculiar deep, fan-like motion of her nostrils, a characteristic symptom for the selection of Lycopodium (sometimes called Vegetable Sulphur) in the treatment of young persons suffering under inflammation of the lungs, and to which I called the attention of the profession and the public in the July number of the *Monthly Homœopathic Review*, 1863. Although years of experience and observation had satisfied me that many of the severe attacks of diseases among animals yielded as rapidly to accurate homœopathic selections administered in an infinitesimal dose, as the like diseases in children, I must confess that I had very little hopes of a favorable result in this extreme case. Twelve globules—yes, twelve globules—of Lycopodium, more attenuated or dynamized than the 200th dilution, were dissolved in a quart bottle of cold water, and a tablespoonful administered every half hour. I left the apparently dying animal at half-past eight in the morning, Mr. Goff, Mr. Lamb, and other persons being present, promising to see her when I returned in the afternoon, if she were still alive. As the forenoon advanced, there being no visible improvement and her death being momentarily expected, a messenger was dispatched to Iver, for the butcher to come and kill her. Fortunately, it being Whit-Monday, the butchers were absent holiday-making. At last a slaughterer was found at Uxbridge, but his men were also otherwise engaged, so the poor cow was allowed time for the Lycopodium to work upon her disease, and to the astonishment of all who witnessed this apparently hopeless case, the cow rose up and stood firmly on her legs, at a few minutes before two P.M. She walked without trembling, and gave most satisfactory evidence that there was neither intestinal nor urinary impediment in her case. I saw her at half-past six in the evening, when she was feeding, and there was scarcely a remnant of the peculiar action of the nostrils to be discovered. One gentleman who observed the symptom remarked that he could never understand what that peculiar action meant, as he had often remarked to his bailiffs and servants when his cattle were dying with pneumonia, 'How that beast sneers.' This is really a very graphic expression of the symptom as it occurs in animals, and the hint may be of use to future observers. The Lycopodium was continued at longer intervals, for although great and marked relief had been afforded to oppressed organic life, it was not to be supposed that a grave lung disease had been thus suddenly cured! In fact, while I write (June 24th), the remnant of the crepitating *râle*, characteristic of pneumonia, may yet be heard by a capable auscultator in the posterior margin of the left lung. During the progress of the case the left posterior quarter of her udder became hard and tender, and suppuration was dreaded. Blood instead of milk came from the teat, still a marked indication for Lycopodium, which I ordered to be continued, and the udder-threatening also soon disappeared, to the delight of Mr. Goff, who watched night and day most assiduously this truly marvellous case."

501. Otitis—Inflammation of the Ear.—*In cattle*, inflammation of the ear usually results from foreign bodies, such as pieces of straw and the larvæ of insects, which become lodged within the ear, occasion pain and irritation, and cause the animal to rub the ear against any hard body which may be convenient, or even to apply the hind foot to it. Both these methods of relieving the irritation are pretty sure to increase the mischief, and may even lead to ulceration. In cases of inflammation, which may be suspected from the animal's inclining its head toward the affected part, shaking its head or rubbing it against the wall, the concha, or hollow part of the external ear will be found swollen, and may be full of mucus or purulent fluid.

In Dogs.—Inflammation of the ear is a painful disease, to which dogs are more liable than other animals.

It may be known by the dog shaking his head and holding it on one side. There is much pain and tenderness when the affected ear is pressed upon during the necessary examination. The flap, also, is tender and swollen. There is a discharge, at first serous and scanty, afterwards purulent and copious, from the ear. The inflammation is probably limited to the external passage, and as far as can be ascertained does not involve the inner ear.

When the discharge continues, the disease called "internal canker" is established. This is, in point of fact, "otorrhœa," symptomatic of chronic inflammation of the parts lining the external passage of the ear.

Deafness also may appear in the old age of dogs; this is, of course, incurable; in other cases it may result from collections of hardened wax, cerumen, in the ear. This should be removed by syringing with warm water, aided afterwards, if need be, with a scoop.

Dogs for the chase are sometimes affected in the ears with corroding ulcers, which ultimately destroy the cartilage. These ulcers are occasioned sometimes by an external, sometimes by an internal lesion, frequently also by excess of food and rest, sometimes by the weakness accompanying old age. Arsenicum, followed by Sulphur, has proved successful in such cases.

Swine, with large pendent ears, have these organs in summer frequently affected with chaps or clefts, in which insects deposit their eggs, which then give rise to larvæ. The latter cause intense itching to the animal, which often shakes its head to relieve itself, and scratches its ears with its hind feet. When these larvæ are discovered, they are to be removed by means of a pledget of tow, the ear is to be washed with warm water, and then moistened several times with *Arnica*. If worms have made their way into the concha, they may be killed with warm oil. Swine are often affected in the ears in consequence of contusions, forming sanguineous tumors, which are to be opened; after which the wound should be rubbed over with *Arnica* water by means of a feather.

502. **Treatment.**—Foreign bodies may best be removed from the ears, by syringing with warm water. Should these substances have occasioned any irritation or even inflammation, a little *Arnica tincture* (one teaspoonful to the pint of water), may be used in the injection.

Insects are destroyed by pouring sweet oil into the ear; then removed by syringing with warm water, or strong soapsuds.

Aconite will be indicated by fever, heat, pain and redness in the ear, and restlessness.

Belladonna is required when there is great pain; when the head seems to be affected. And may be useful when deafness sets in, as if from cold in the head.

Arsenicum is advised when suppuration has taken place or an abscess has formed, especially in cattle; also followed by **Sulphur** for ulcers in the ears of dogs.

Hepar s. c., when a discharge, otorrhœa, has been set up, and tends to become chronic.

Mercurius may be useful in canker of the ear; in such swelling as leads to the formation of a small abscess, and even in deafness, or discharges from the ear.

Pulsatilla, recommended in deepseated abscesses, and catarrhal deafness.

Carbo veget. has been found useful for ulcers in the ears of dogs.

Dose.—In acute, inflammatory affections of the ear, the remedy chosen may be given in from five to ten drop doses, according to the size of the animal, once in three or four hours; in chronic cases, night and morning, in a similar manner.

Dulcamara, Nux vomica, Sulphur, and **Aranea diadema,** have also been recommended in various diseases of the ear, in domestic animals. See Materia Medica.

503. **The Sheep Maggot.**—Since the raising of sheep has become a most important branch of productive industry in this country, especially in the Western States, the following account of the dangers to which flocks are exposed, in Great Britain, from maggots, and of the methods adopted to prevent their ravages, will be interesting, and may prove practically valuable.

Shepherding in England requires a careful counting twice every day, more particularly in July and August, for the black beetles there strike the same as the fly; and the maggots are striped along the back with a black mark; they are so large and voracious that they soon get into the poor sheep's insides and cause death. In showery and sultry weather, in summer, the beetle will strike in any damp place in the wool, especially if soiled with the sheep's own dung or by lying down on cow's droppings. A shepherd becomes practiced so that he can detect the place where "fly blown" or blow-fly beetles, before maggots, have begun to worry the sheep; and, by applying some lotion (mercury water) which he generally carries in his pocket when the animals are in many fields, as they generally are, the evil is checked at once; but when an oversight has given time for the maggots to begin gnawing at the skin, the animal struck will be very uneasy, lying down and rising again directly, running fast some steps and then stamping; and if it has sought some private corner, or other place out of sight, it has become sick from the continued worry, and the shepherd finds it as soon as, on counting, one is seen to be missing. However, a shepherd feels himself disgraced when the maggots are allowed to get this headway before being discovered; hence, every careful shepherd will, with the assistance of his dog, trail the flock in every field, steadily along, so that he can look closely into the wool on each sheep as they file past him or as he slowly goes by them; and after viewing one side, he goes round and examines the other; or when he has a first class dog, that sagacious creature will make the whole number lengthen out so that they can be clearly looked all over in a few minutes. The shame felt by the shepherd when maggots get large enough to break the skin badly, is because the wool comes off and the mark remains till after the next shearing.

The large blow-fly deposits eggs on the sheep, during hot days in summer, especially when the quarters and adjacent parts are fouled from diarrhœa. Any wounded surface is also a favorite place for such deposits. The eggs in process of time are developed into myriads of maggots, which eat into the skin, and cause deep sores, and free mattery discharge. The animal becomes depressed, eats nothing, and sinks from exhaustion, unless properly cared for and treated.

The treatment consists in clipping off the wool from the soiled or injured parts which the fly attacks; in keeping it thoroughly clean; in feeding liberally to support the strength; in giving five drops of *Arsenicum* three times a day; and in dressing the part with *Carbolic acid* lotion. See Materia Medica, CARBOLIC ACID.

504. Gloss Anthrax in Pigs.—The pig is peculiarly subject to several forms of putrid fever, attended with outbreaks of carbuncular swellings, including a malady identical with gloss anthrax in cattle and sheep; see page 198. The symptoms are: Tremblings and uneasiness, anxious, frightened look, loss of appetite, hot mouth, and thirst, with dribbling of mucus from the mouth, and feverish excitement. The appearance of a vesicular or pustular eruption in the mouth is somewhat similar to that found in cattle, as well as the tendency to ulceration, sloughing, and gangrene of the tongue and mouth, the great prostration and the rapid death. Bloody and offensive diarrhœa frequently comes on towards the last.

The great rapidity with which this disease runs its course renders it important that no time should be lost in treating it as soon as it makes its first appearance. The diseased swine should be separated from the rest, and the same person should not attend upon both. The putrid and poisonous secretion from the pig's mouth in this disease may prove as fatal as that from a glandered horse; and the greatest care should therefore be taken to avoid being inoculated by it.

Tartar Emetic will be required when the mouth is covered with white pustules.

Mercurius Biniod. (Red Iodide) may be needed when the disease is more advanced; the tongue and mouth covered with angry ulcers, from the pustules bursting; when there is reddish and offensive discharge, and swelling of the neck and throat, with difficulty of swallowing.

Arsenicum, when gangrene threatens, and the animal is drowsy and prostrated.

Carbolic Acid lotion should be applied frequently, both to get rid of the bad smell, and to destroy the contagious property of the discharge, and remove the tendency to sloughing and gangrene. If there be one large carbuncle, it should be freely opened with the knife, and then washed out with the lotion. This procedure will be useful to prevent the reabsorption of the virus into the system, by which the animal becomes still more thoroughly diseased. Compare also the directions given on page 199, for the treatment of this affection in cattle and sheep.

505. Hog Cholera.—This is known in some places as "distemper in pigs," or the "blue disease;" and is believed to have some relation to the carbuncular diseases of pigs, described on page 372; and to the gloss anthrax in cattle, sheep, and dogs, described on page 198, and of which an account as affecting pigs is given above.

Hog Cholera begins with dulness, loss of appetite, holding the head low; then the animal lies on its belly and evidently suffers much pain there. Retching or vomiting of food, bile, or mucus, is a common symptom. In some cases we observe drowsiness; in others delirium. The skin, especially about the back, belly, and inside of the legs, is of a blue or purplish color. Symptoms of paralysis of the hind legs appear; the surface becomes cold; and death may take place in a few hours.

Belladonna will be required when the animal is excited, has pain as if from colic, when the rash comes out, and where there is delirium.

Rhus will be indicated by the rash, especially of a dark purplish hue; by diarrhœa; by drowsiness and symptoms of prostration, and by the tendency to paralysis of the hind legs.

Arsenicum may be the one remedy for the great majority of cases; it is, equally with Rhus, indicated by diarrhœa and exhaustion, by the blue color, and it has the *vomiting* and coldness of the surface.

Dose.—Of the selected remedy give five drops every hour or two hours, according to the violence of the symptoms.

Additional Directions.—On the appearance of this disease, the swine should no longer be allowed to run together; the affected pigs should be placed by themselves. The means for preventing this form of malignant disorder (and the same are equally requisite in its treatment) are thorough cleanliness, removal of filth, clean bedding, sluicing the body with cold water, allowing exercise, and admitting fresh air. Sound food, both vegetable and animal, should be given.

506. Causes of Accidents and Diseases.—From Col. Fitzwygram's "Horses and Stables," we extract the following valuable summary of the ordinary causes of accidents and diseases.

1st. Diseases of the bowels and urinary organs, such as stomach staggers, colic, inflammation of the intestines and kidneys. Ordinary causes: Bad forage or improper watering and feeding.

2d. Diseases of the chest, coughs, colds, &c. Causes: Want of ventilation, overcrowding, exposure, and neglect.

3d. Glanders and farcy. Causes: Want of ventilation, damp, bad drainage, overwork, bad feeding, neglect or improper treatment of other diseases, or in short any causes that produce long-continued debility. Horses of faulty conformation, especially those with narrow chests, are predisposed to these diseases. Contagion is also an occasional cause.

4th. Epizootics, such as influenza and low fever. Causes: Atmospheric changes. The precise nature of these changes is not well understood. This much, however, is certain, that whilst epizootics run almost periodically and with great severity through badly ventilated, ill-drained, dirty, badly regulated stables, they seldom seriously affect those where proper sanitary arrangements are enforced, and where the stable management is good.

5th. Diseases of the eyes. Common ophthalmia generally arises from accidents. Occasionally it is due to an extension to the eye of inflammation already existing in the mucous membrane of the nose. True, or as it is usually termed, specific ophthalmia, arises from constitutional causes, for a detail of which the reader is referred to pages 175–77, on the eye; and sometimes from hereditary predisposition.

6th. Diseases of the skin, such as mange and ringworm, are generally connected with bad grooming or bad forage, and sometimes with the use of barley straw for bedding. Some skin diseases are occasionally propagated by contagion.

7th. Cracked heels and grease and canker nearly invariably proceed from neglect or bad management. No doubt certain horses are more predisposed than others to such affections; but these diseases, we believe, will never appear, where the stable management is really good. Thrushes also are usually a disease of neglect.

8th. Diseases of the feet, such as corns, sandcrack, and quittor. Causes: Bad shoeing and neglect.

9th. Sore backs and broken knees. Causes: Bad saddling and bad riding, and also as regards broken knees, bad shoeing, defective action, and accidents.

10th. Bites, kicks, and wounds. Causes: Carelessness of servants, and bad stable gear.

11th. Sprains and diseases of joints. Causes: Severe work or work for which the animal is physically unfit, or for which he has been insufficiently prepared; and also accidents.

12th. Strangles. This disease seems to be almost inherent to the constitution of the horse. At some time or other it appears in most horses; but its development at any particular time appears to be dependent in some cases on atmospheric changes, and in other cases on dentition.

13th. Accidents. Causes may, as a general rule, be summed up under the heads of carelessness and bad management. Some few accidents, however, are confessedly unavoidable.

14th. Laminitis, weed, and some other diseases, though local in their development, usually proceed from constitutional disturbance.

Overfeeding and want of exercise in some cases, and the reverse conditions, such as overseverity of work and bad feeding in other cases, are the common causes of the derangements of the general health.

From this enumeration it will be seen, that diseases and accidents mostly proceed from preventable causes. Whenever, therefore, any disease or accident occurs, the cause should be promptly and diligently sought out; and no owner of horses should rest satisfied, until he has found it out and has taken measures to prevent such occurrences in future.

507. Casting.—Casting in the stall generally arises from the animal getting his legs entangled in the rope. This accident will rarely happen, where due care is taken in regard to the length of the rope, and the use of a log is insisted on, that is, a billet of wood or other weight, attached to the spare end of the halter, and which by falling in the manger, prevents the slack of the halter from getting under the horse's feet. Casting occasionally arises from the horse endeavoring to turn or roll in his stall. In such cases fastening on both sides, as recommended by experienced hostlers, will be found useful. If any particular horse acquires a habit of rolling, and in consequence frequently gets cast, he had better be kept in a loose box.

508. Frightened Horses.—In case of fire in his stable, the horse is apt to become badly frightened, and madly resist all efforts to remove him from his stall, and if free, will even rush back into his place in the burning building. Covering the animal's head with a blanket, or coat, will usually render him docile enough to be led out into safety. If this recourse fails, no time should be lost in casting the horse, when he can be dragged out by main force by his hind legs, the fore legs having been bound together. This method may seem rude; but by it horses have been rescued, comparatively uninjured, that would otherwise have perished in the flames.

In moments of danger from the approach of railroad trains, for horses who cannot otherwise be controlled, and when they cannot be removed in season from the vicinity of the locomotive, let the animal's head and eyes be completely enveloped with a thick covering, and although the noise of the train may greatly disturb him, he can be restrained from mischief till the danger is past. This procedure has been found invaluable in cases where the carriage-road runs parallel with the railroad track.

CHAPTER XV.

Materia Medica.

SPECIFIC EFFECTS AND CHARACTERISTIC SYMPTOMS OF THE REMEDIES.

A complete list of Remedies will be found immediately succeeding the Preface in the first part of this work; also a separate list of those which are externally employed.

A list of Remedies for external use, and the mode of preparing them, may also be found at the close of the present chapter on Materia Medica. Although it may not be amiss to remark here, that any medicine may be prepared as a "lotion," for external application, by mixing one part of the mother tincture with fifteen parts of soft water, in the following manner: Let one fluid ounce of the tincture be poured into an empty pint bottle; add water gradually, shaking the whole forcibly with each addition; and the lotion will be perfect when the bottle is full.

Full directions for administering the medicines, and for the size and repetition of the dose, are given in the Introduction.

A careful and repeated study of the following chapter—which presents in brief the principal symptoms of the various remedies, and indications for their use—will be of very great advantage, since from such study the veterinarian will be enabled to treat successfully any new forms of disease which may arise; as was the case with the Horse Distemper of 1872. Homœopathic physicians and veterinarians having a knowledge of the Materia Medica were able to prescribe at once for this new and malignant epidemic, and to distinguish themselves and greatly advance homœopathy in public estimation by promptly curing their cases. Such study of this chapter as is here recommended may also become very profitable by enabling the reader to prescribe correctly, and of course (in curable cases) successfully, for disorders or morbid conditions not particularly described in this work. And by such thorough and practical knowledge of the medicines, the veterinarian will be able to treat with success cases whose exact pathological status he may not perfectly understand.

ACONITUM NAPELLUS.

CHARACTERISTIC SYMPTOMS.

In respect of the Skin and External Surface.—Shivering fits, alternate shivering and flushing of heat, coldness of the legs and feet, excessive heat generally, or local and partial heat. The extremities being alternately hot and cold, *coldness predominating;* or the heat being irregularly developed in them: as for instance, *one leg hot and the rest cold;* the hot fits are often succeeded by profuse sweating (in horned cattle the heat is greatly increased at the root of the horn). The back and loins are excessively tender, and susceptible to the touch; the animal cannot bear the least pressure about those parts. Animals which are covered with *hair* exhibit a *staring coat;* that is, the hair, instead of being smooth and glossy, is *rough and on end.* There are alternate hot and cold fits throughout the frame; sometimes swelling becomes manifested about the back, shoulders, and loins; or we may have heat, swelling, and redness of particular parts; *coldness of the ears;* the ears hang down; very vivid redness of the nostril about the external orifice.

In respect of the Movements.—The animal is uneasy, fitful, or averse to motion; languid, and disposed to retain one position, or constantly *changing positions;* as, for instance, first lying down and almost immediately resuming an erect position; or the position is constantly erect, so long as the animal can possibly retain it. The animal constantly shifts its position, as if successively to relieve the parts which become most exposed to bear the weight of the body. The neck is extended and the head held out horizontally. When stationary the animal will stagger, particularly in the hind quarters, if forced to move. The animal withdraws to a cool and shady place, and lies down without ruminating, keeps aloof from its companions, and moves slowly, reluctantly, and with difficulty when driven (these symptoms not being occasioned by local causes); the back is raised and the feet are planted close together. Sometimes stupor, with recumbent but unnatural position, and often fruitless attempts to get up.

In respect of the Pulse.—The pulse is full, *hard,* and *accelerated,* or much accelerated, weak, and sometimes irregular; sometimes also *accelerated, soft,* and *indistinct* (in the horse), being rather a species of vibration than a positive pulsation, and in very quick succession.

In respect of the Respiration.—The breathing is *laborious* and impeded, or it is *quickened, panting,* and attended with frequent low moaning. The *breath is hot:* heaving and panting are provoked by the least exertion. The *flanks heave violently* with the operation of breathing.

In respect of the Excrements.—The evacuations are *hard, dry, insufficient, detached in small quantities,* unequally dark in ruminating animals, and of a light yellowish color in the horse, or the evacuations are wanting altogether. The excrements are also *sometimes bloody.*

In respect of the Urine.—The urine is dark, scanty, interrupted, with frequent attempts to stale, but without sufficient discharge: or there is a total suppression of urine

In respect of the Mouth, Muzzle, and Tongue, &c.—The muzzle is *hot* and dry, the nostrils are dilated, the tongue appears to be enlarged the mouth is clammy and dry. General and unusual redness of the tongue, *redness of the edges of the tongue*, enlargement of the glands of the tongue, yellow-brownish hue of the tongue; enlargement and sensitiveness of the parotid glands, and of the glands of the lower jaw; swelling, heat, and redness of the inside of the mouth, the gums, throat, &c.

In respect of the Eyes.—Lachrymation, redness, protrusion, dilatation of the pupils, or the eyes are partially closed, as if the sight were painful. Red streaks about the white of the eye; the eyelids are swollen, and the inside of the lid is bright red, and hot. The *pupils excessively contracted.* Extreme impatience of light; bright red *suffusion of the eye.*

In respect of the Disposition.—Dulness, apparent reluctance to be disturbed even to be assisted; sometimes also excessive timidity and dread of the approach even of those in constant attendance.

In respect of the Appetite and Thirst.—Disinclination to feed—sometimes even absence of all appetite; apparent distaste for whatever food is offered, with a hankering after something; the inclination to drink is not necessarily an attendant upon fever in the inferior animals; the animal grazes evidently without relish, listlessly, and often abstains from grazing altogether; moderate or extreme thirst.

In respect of Rumination.—Rumination is either entirely suspended, or it is irregularly, imperfectly, or listlessly performed.

In respect of the Extremities.—Coldness of one foot or leg, with simultaneous heat of another, or coldness of all the extremities simultaneously, with general heat of the body; or greatly increased heat of the foot, or of the joints about the leg, with acute sensitiveness and tenderness of pressure; constant shifting of the weight from one to the other; recumbency, provoked by a dread of standing upon the legs and feet; swelling of the legs and feet, enlargement of the vessels about the hock and pastern joints; the fore legs parted when in an erect position; violent throbbing in the artery of the pastern joint; expression of pain upon the horn of the foot being slightly struck; incapability of standing; and great dread of the strain on the fore legs produced by lying down, but evident relief following recumbency; want of firmness in the joints; tottering; apparently paralytic weakness of the limbs; tottering and trembling of the knees; exceeding tenderness of the legs to the touch, the animal catching up the feet when the parts are touched.

Summary.—Inflammation and congestion. Fever. Shooting pains. Determination of blood to a part. Rush of blood to the head and face. Neuralgic pains about the head, face, and jaws. Congestion of blood to the chest and lungs. Alternation of heat and cold in a part. Coldness of the legs and ears. Tenderness to slight pressure on the affected part; the animal flinches. Coat rough, staring. Great languor; restless; uneasy; constant changing position; groaning with pain; thirst. Pulse full and bounding; quicker than natural, or very quick. Breathing quick; panting. Labored heaving of the flanks. Breath hot; mouth dry and hot. Tongue swollen. Tongue brownish in the centre; edges red, or tongue white. Indifference to food. Dung dry; hard; small in quantity; pale, or blackish. Urine scanty; dark color. Cough short and dry.

AGARICUS MUSCARIUS.

CHARACTERISTIC SYMPTOMS.

In respect of the Skin and External Surface.—Evident prevalence of *constant itching* over the whole surface of the body, evinced by the constant recourse of the animal to rubbing or scratching itself against everything; the *prevalence of much scurf* over the entire surface, and especially along the *ridge of the back;* scurf, especially about the tail; *patchiness, or even general decidence* of the hair or wool; superficial heat; development of ulcers in various parts; *mangy state of the skin; blotches* or *stains* developed on various parts of the coat, *the hair falling off and leaving the skin bare;* skin very rough where the hair has fallen off: sudden *development of redness and inflammatory state of the skin,* bearing much resemblance to the manifestations of *erysipelas; a pustulous lumpy eruption* appearing on various parts (of the horse), and generally first seen at the roots of the mane; exudation of a mattery fluid and the *formation of scabs; scabs which are cast* carrying with them the scurf, *skin and hair;* excessive itching evinced in the constant effort of the animal to bite or scratch the parts; the skin becomes puckered and almost withered where laid bare; *sensitiveness of the bare parts to the touch;* extreme sensitiveness of cold air, and a peculiar and general tenderness of the skin.

In respect of the Movements.—Extreme *restlessness;* constant change of position; repeated efforts to bite, scratch, and kick at various parts of the body; impatient stamping and pawing, as if annoyed by flies; reluctance to be harnessed or put to work.

In respect of the Pulse.—The pulse is *full, hard, and accelerated* simultaneously with the redness and high inflammatory action of the skin; or *small* and accelerated (sometimes remarkably rapid) simultaneously with the pustulous exudation or the scurfy scaling off of the scarf-skin.

In respect of the Excrements.—Constipation; small, detached, dry, *dark,* or *yellow* stools; or ash-colored, white, dry, bullety evacuations. Very slow, difficult, and impeded passage of the excrements.

In respect of the Urine.—Discharge scanty, and at distant periods; accompanied or followed occasionally by the discharge of a stringy phlegm from the passage.

In respect of the Nose, Mouth, Throat, Teeth, Tongue, Muzzle, &c.—Nostrils excoriated, inflamed, and sometimes even ulcerated; *diminished or altered faculty of scent.*

AMMONIUM CARBONICUM.

CHARACTERISTIC SYMPTOMS.

In respect of Skin and External Surface.—Enlargements of the small glands, especially about the joints; excoriations between adjacent parts; sweating particularly about the legs and feet; a dry heat of the same parts, or, again, excessive coldness of the extremities simultaneously with increased development of heat about the head. The sweats are principally observable towards the morning, whereas the evening is usually ushered in with violen *fits* of shivering.

In respect of the Movements.—*Drowsiness and aversion to motion i the daytime*, followed by retarded, interrupted, restless, and unrefreshing slee at night. Constant desire to change the position, evidently from pain an *general uneasiness* (as evinced by the deprecatory expression of the animal) Shrinking at the approach even of the regular attendant, with sudden movements and starting, expressive of *peculiar timidity*.

In respect of the Temper and Disposition.—Fretful and intractable perverse contraversion of the *ordinary habits*.

In respect of the Excrements.—Evident difficulty and effort in evacuating the motions, being as it were *squeezed out* through a *constricted* and *narrow orifice;* hard, bullety, or stringy stools; hard and *dry evacuations, sometime moistened externally with blood* or *followed* by *discharge of blood*. Tingling and *itching of the parts*, evinced by the constant motion, or firm closing or clenching (?) of the tail downwards, as also by the repeated rubbing of the parts against the nearest object.

In respect of Urine.—Constant inclination and effort to pass water, with scanty discharge; increased discharge of water at night. Urine tinged with blood, or depositing a thick, whitish, gritty sediment.

In respect of the Extremities and Bones of the Extremities.—It is in those portions of the structure that we should look for the most distinct and positive indications for this remedy; as, for instance, if there be *stiffness of the legs generally, and of the joints* in particular, *after rest*, and especially *at night, removed or modified* after some continuance *of motion. Cracking sound in the joints* on first moving; *apparent* yielding, trembling, and want of strength in the legs to sustain the body; enlargement of the veins of the legs; *swelling, enlargement, and tenderness of the bone and coating of the bone, especially below the knee and hock;* or swelling and *similar symptoms about the hock and pastern joints*. Enlargement of *the entire course of the tibia;* tendency to cracking of the skin and other integuments of the feet, *brittleness of the horn or nails*, and the formation and casting of dry *harsh scaliness from the skin*.

In respect of the Eyes.—Here also we have striking indications for *Ammonium carbonicum;* as, for instance, if there be partial or total blindness of one or both eyes (evinced by the animal being indifferent to brisk motions, or to the extension of the hand before one or both eyes), without, however, any apparent change in the transparency of the eye; paralysis of the optic nerve; collection of matter on the eyelids; stye and other formations along the margin of the eyelids; motionless condition of the eyes; cataract of the lens, or a white and completely opaque formation upon that portion of the eye, or cataract upon the covering membrane of the lens; bluish-gray, semi-opaque cataract; the pupil dilated, immovable, glassy, but insensible of light or of external objects.

In respect of the Head.—Attacks of giddiness, evinced by reeling and sometimes falling.

In respect of the Appetite.—Predominance *of thirst* over hunger.

In respect of the Mouth, Teeth, &c.—*Redness and swelling throughout the mouth;* absence of moisture in the mouth at night; at other times increased secretion of saliva; obstinate and continued looseness of the teeth, evidently painful and imperfect mastication, the animal snapping irregularly at its food, and not resorting to the *natural partly oblique motion of the jaws* in eating. The gums inflamed, and readily provoked to bleed by being pressed; the development of numerous little bladders on the tongue and over the inner surface of the cheeks.

AMMONIUM CAUSTICUM (Water of Ammonia).

CHARACTERISTIC SYMPTOMS.

Violent spasm of the stomach; affections of the lungs and bronchia; dulness of the head; difficult deglutition; burning thirst; vomiting of food or mucus; difficult breathing; excessive exhaustion and muscular debility; can scarcely stand; violent trembling; the pulse increases in rapidity from hour to hour; great tendency to start.

Fever (typhoid) of putrid type, and offensive breath; croup; inflammation of the nostrils, throat, larynx, trachea, œsophagus, and bronchial tubes; even with croupous formations of false membranes; congestion to the lungs; violent oppression of the chest; want of breath; desire to draw a deep breath, which is prevented by pain; hurried, heavy, rattling breathing; abscess in the lungs.

Coryza and Catarrhal Diseases.—Used by veterinarians in many forms of dangerous disorder,—fevers with destructive tendency, affecting the lungs and stomach and skin; erysipelas and scarlet fever; *malignant angina.*

AMMONIUM MURIATICUM.

CHARACTERISTIC SYMPTOMS.

In respect of the Respiratory Apparatus.—*Cough* generally severe; *dry*, hoarse cough, becoming gradually more violent; *cough particularly after drinking;* the same on first leaving the stable (in respect of the horse) in the morning, these symptoms accompanied or followed by the expulsion of much thick phlegm from the nostrils; the discharge from the nostrils of a thick, tenacious character, ejected by sneezing (in respect of the dog, as in distemper); thick, *husky cough*, *wheezing respiration;* fits of coughing, which end in retching; *thick breathing;* rapid, oppressed, or interrupted respiration; frequent and laborious respiration, *aggravated by motion.* Symptoms of this kind following and resulting from acute inflammation of the air-passages: *deep cough* and *panting respiration;* short and painful breathing. *Inspiration is effected by a single effort;* expiration, on the other hand, is *effected by a double effort;* the motion of the flanks distinctly indicative of these remarkable distinctions; the *breath becomes offensive;** bubbling in the chest.

In respect of the Pulse.—*Irregular* and *slightly* accelerated, or weak, soft, and yielding; pulsation of the heart very weak when in rest, but easily increased by motion; sensation as if balls were rolling athwart the parts about the heart upon contact.

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* With the ox, cow, &c., this is a peculiar symptom, because the breath, in health, is known to be pleasant, fragrant, and to convey the sensation of *freshness*

In respect of the Movements.—The animal is startled by being abruptly moved; lies on one side or the other, or upon the belly with its knees doubled under it, quickly rising again; but most *frequently it refuses to lie down* at all; the head does not positively droop, but is rather stretched out horizontally; the animal is dull, sluggish, and apparently indolent, being averse to motion, *and staggering when compelled to move.*

In respect of Rumination.—First, the *rumination is performed in an erect position*, and is subsequently suspended altogether.

In respect of the Appetite.—When the symptoms here described return after an interval of improvement, following acute inflammation, we may remark the gradual return of the same *absence of inclination to eat*, accompanied with gradual or very rapid emaciation.

In respect of the Skin and External Surface.—A peculiar crackling sound upon pressure, shivering, coldness of the extremities; the mucous membranes about the nostrils, mouth, tongue, eyes, &c., are pale, watery, puffed, or charged with thick phlegm or matter. *Shivering, especially towards evening; the coat is staring, rough, and glossless; the appearance of tumors about the parts surrounding the ears, as also about the neck, back, and loins.* The loss of flesh is very apparent from day to day, and the skin *appears to cling to the bones.*

In respect of the Excrements.—We have variously the most *obstinate costiveness*, or the most *intractable relaxation;* in the latter case the evacuations are slimy, or even watery; the relaxation is almost *invariably observed to succeed the costiveness*, when the latter has been the earlier symptom.

In respect of the Milk.—It rapidly fails.

In respect of the Mouth, Nose, &c.—Adhesive or watery discharge from the nose, which becomes very offensive. Adhesive and offensive phlegm within the mouth. Ulcerations about the mouth, gums, and nostrils.

In respect of the Extremities.—We may notice tendencies to ulceration, exfoliation, &c., as also stiffness and swelling of the joints; *paralytic weakness and tottering; intense coldness of the feet*, which constitutes the distinctive symptom of affections of a grave nature, involving the respiratory organs of cattle: occasionally there is convulsive jerking of the limbs.

ANTIMONIUM CRUDUM.

CHARACTERISTIC SYMPTOMS.

In respect of the Extremities, Skin and External Surface Generally.—Corns and other *callous excrescences;* tumors in the vicinity of joints; tumors and swellings, involving the muscle, tendons, ligaments of the joints, and membranes which surround the joints. The development of tumors in the anterior part of the knee-joint (in one knee at a time), which yield to pressure, but which are at first attended with *no pain*, nor any increased development of heat, *or inflammation*; similar tumors, attended with considerable development of *heat and evident inflammatory action;* tumors occasioned by the accumulation of a watery fluid beneath the skin, or within the interior integuments of the joint. Hot, *hard and painful swelling of the joints, particularly* *of the knee-joint.* Fungous excrescences about the feet. *Scurf, succeeded by scales,* which, upon being cast, betray *corroding ulcers; pustulous eruptions,* eruption of small pimples behind the ears; *chapping,* and sores; warts; warts in the *vicinity of the teats;* dropsical *swelling of the legs,* in combination with general swelling of the body. A cleanness of the limbs, with appearance of *attenuation,* in comparison with the dilatation of the rest of the body; general dropsical swelling of the entire frame, the skin being *dry* externally, and the *coat very rough.* Drooping of the belly and hollowness of the flanks.

In respect of the Pulse.—*Irregular,* occasionally, or alternately *accelerated* and *slow.* Periodical *acceleration of the pulse from noon till midnight* every third day.

In respect of the Excrements.—Thin, watery evacuations, with frequent return, and much evident urging. Evacuations preceded and accompanied with much pain, as evinced by the moaning or movements of the animal, and by the fretfulness and intractability which often result; *fetid and papescent evacuations,* attended with considerable discharge of phlegm or blood, or the two mingled together, from the passage.

In respect of Urination.—Frequent and copious emission, sometimes also attended or followed by discharge of phlegm.

In respect of the Respiratory Organs.—Dry and shaking cough upon the first inspiration of the open air in the morning; *deep and protracted breathings;* repeated drawing of a deep breath, sometimes interrupted; *oppressed and difficult breathing;* complete suspension of breath, and convulsive effort to breathe at intervals.

In respect of the Mouth, Throat, Nose, &c.—Pale hue of the membranes of the mouth and nostrils; the mouth is either *very dry,* or there is an excessive *secretion of thin, watery saliva,* which *pours from the mouth.* The *nose very dry,* and the nostrils *chapped and scurfy.* The tongue loaded and white, or furred white on the upper surface, and bright red at the margins.

In respect of the Eyes.—Suffusion of the conjunctiva, with a *slightly yellow hue;* the accumulation of a clear fluid in the corners of the eyes.

In respect of the Movements.—Dulness and *dislike to motion; inability to stand,* from languor and lassitude, which are readily detected in the bearing of the animal, and *incapability of remaining in a recumbent position,* whence the animal *rises immediately,* with a violent effort, strongly contrasted with its characteristic listlessness, and occasioned by impending suffocation.

In respect of the Appetite.—Absence of appetite, which is supplanted by the *prevalence of excessive and continued thirst.*

Summary.—Stomach disease; gastritis; surfeit; chronic laminitis; navicular lameness; excrescences on the feet; cramp-like pains in the stomach, which draw the animal up; derangements from overfeeding; irregular appetite; loss of appetite. Great sensitiveness to cold weather. Oppressed and laborious breathing. Blotches and humors under the skin. Small hard lumps, or sluggish tumors about the neck and ears; some form pustules, others scale off. Hard, callous excrescences; dropsical swelling of the body and of the legs. Inflammation and swelling of the joints, especially the knee; shooting pains in the legs; inflammation of the tendons. Excoriation of the nostrils; cracks and fissures about the mouth; dryness of the mouth. Dung soft;

mixed with mucus, and sometimes blood; constant secretion of mucus at the anus; urine pale, copious.

APIS MEL.

CHARACTERISTIC SYMPTOMS.

Skin dry and hot. Mouth and nose hot. Inflammation of the tongue, mouth, nose, and throat; great soreness of the throat externally, he cannot bear to have it touched. Breathing short and difficult. Inflammation of urinary organs. Suppression of urine. Dropsy; anasarca; dropsy of the chest, especially without thirst in dropsy. Dropsy of the head; of the heart, and of the belly. Dropsy without thirst.

Angina.—Inflammation of the fauces, especially right side; red and inflamed throat, which is red and dry; urine scanty and dark-colored. Diarrhœa. Rapid and painful respiration, aggravated by lying down; better on inhaling the fresh air while standing up. Worse from heat; inflamed parts relieved by cold water. Erysipelatous inflammation of the skin. Urticaria, or nettle-rash; eruptions like bee-stings. Swelling of the legs, which are cold.

Has been used in typhoid fever with inflammation of the throat.

ARNICA MONTANA.

CHARACTERISTIC SYMPTOMS.

In respect of the Pulse.—As in affections generally arising from mechanical causes, such as injuries occasioned by mere accident, or febrile action consequent upon difficult labor, and mechanical interference in the removal of the fœtus, &c., we may remark a regular, *wiry*, *hard*, and accelerated pulsation, or a full and rapid pulse, which is afterwards hard, accelerated, but small, one or the other of which generally accompanies the following manifestations.

In respect of the Disposition.—Excessively timid and sensitive, or characterized by a kind of *vindictiveness* and an inclination to injure all who approach the animal.

In respect of the Skin and External Surface.—*Shivering*, coming on by irregular fits, sometimes affecting the whole frame, and sometimes only *particular parts;* increased development of heat *with rest*, and at night; sour-smelling sweat at night; enlargement of the glands generally, and of the glands of the neck in particular; distension of the veins towards the extremities; *acute sensitiveness of the loins* to the touch, the animal *flinching when those parts are pressed;* increased development of heat about the loins; *the legs and ears cold* when there is inflammatory action of the intestines, or of the natural heat, if there be no organic inflammation; hardness and *swelling of the belly;* inflammatory swelling and tenderness of the feet; in bare parts, or where the color and nature of the tumefaction can be remarked, it will be found puffed and red.

In respect of the Movements and Position.—The hind legs apart; restiveness if compelled to turn or exert the limbs or parts of the body which are the seat of pain, turning being evidently painful; constant turning of the head towards the flanks; if at large, the animal will wander listlessly from place to place; the feet are quickly relieved in succession—one being constantly raised, and impatiently pawing the ground; the animal seems to be looking for assistance, and is incessantly restless; the head is stretched out, and rested upon the nearest support, or, if in a recumbent position, it is rested on the flank.

In respect of the Mouth, Tongue, Muzzle, &c.—The muzzle is hot and dry; the mouth open, and the tongue held out; grinding of the teeth.

In respect of the Expression.—Wild and staring expression.

In respect of Discharges and Secretions.—*Severe discharges of bright red blood;* discharge of milk tinged with blood; *involuntary discharge of milk;* drying up or absence of secretion of milk.

In respect of Rumination.—It is totally suspended, except in the case of affections of a purely local character.

In respect of Excrements.—The *evacuation of crude and indigested matters.*

In respect of Urine.—Voided scantily—frequent urging, and, as the attempt to urinate becomes more frequent, the discharge becomes less, and *ends in absolute retention.* The urine is usually of a dark, reddish-brown, or bloody hue.

In respect of the Appetite.—*General reluctance to eat,* preceded by *apparent eagerness;* little or no food consumed; apparent gratification at the offer of drink, which, however, the animal seems to shrink from when offered; tendency to reject the food as soon as it is in the mouth, sometimes followed by discharges of thick, clotted blood from the mouth and nostrils.

In respect of the Respiratory Organs.—Dry harsh cough; cough, occasionally followed by discharge of blood from the mouth; putrid and offensive breath; *the pulsations of the heart accelerated and increased* in strength and fulness simultaneously with the fits of coughing; short and difficult breathing; anxious and irregular respiration, with the occasional drawing of a deep breath—suspended, as if space were wanting for sufficient expansion. These symptoms usually attended with restlessness and *evident uneasiness in any position,* the animal turning from one side to the other, lying down or rising, and as quickly returning to the position from which it has but just moved.

Summary.— Contusions; bruises; contused wounds. Dislocations; sprains; fracture. Mechanical injuries, from falls or blows.

Internal Use.—Sudden shock; concussion; partial paralysis of the nervous system; paraplegia; palsy. Congestion of blood to the head, with general coldness of the body; shivering; trembling. Whirling giddiness in the head after a very small quantity of food; drowsiness. Breathing short; painful shootings in the chest. Lockjaw from injury. Boils on the skin; food passes undigested. Urine red; bloody. Inflammation arising from, or in connection with, wounds. (*Also Aconite.*)

ARSENICUM ALBUM.

CHARACTERISTIC SYMPTOMS.

In respect of the Skin and External Surface.—Beneath the wool will be observed a yellowness, harshness, and dryness of the skin; roughness of the coat, patchiness of the wool. The appearance of hard scurfy patches upon the skin, over various parts of the body, closely succeeding high inflammatory action; *black quarter;* discharge of offensive and bloody secretions from the nose and mouth; the development of spreading and angry ulcerations, commencing about the belly, teats, and quarters, and rapidly extending throughout the frame; the ulcers emit a fetid offensive odor; *black pustules* on various parts of the body; arid, *harsh, and cold skin; the skin becomes loose and flabby,* and emits a peculiar crackling sound upon pressure; yellow and black spots become developed on the skin; *the wool* (of sheep) *is rapidly cast,* or is so far disengaged that it may be pulled off with the greatest ease. General desquamation; livid distension of the vessels where they are distinguishable at the surface; the febrile symptoms assume a periodical character, and are followed by profuse and adhesive sweating.

In respect of the Movements.—Torpor and inanition; with incapability of motion; total failure of strength, and incability of exertion, or of keeping an erect position; if particular parts have been especially affected, the animal shrinks from pressure or contact about them: motion, if effected, appears to modify the symptoms: generally, however, motion becomes impossible, and a recumbent and prostrate position is retained.

In respect of the Pulse.—The pulse is small, and much accelerated, or intermittent, or very feeble, and scarcely perceptible; or it is tremulous and uncertain; or it is accelerated, weak, and irregular. The pulsations of the heart are likewise irregular.

In respect of the Respiration.—Anxious, difficult, and noisy respiration; difficult, short interrupted breathing; an appearance of gasping for breath, as if choking.

In respect of the Excrements.—Blood-streaked and excessively fetid; dark, scanty, and difficult evacuations, likewise conveying an idea of utter putridity; the evacuations are slimy, covered with offensive matter, or with grumous blood; there is sometimes a discharge of sheer matter from the passage, accompanied with evident urging: protrusion of the rectum, and evident soreness. Sometimes also we may notice unintermitted urging, without any result. *Alternate costiveness and colliquative purging,* ending in *continued obstinate and fetid looseness;* very acrid whitish evacuations. Evacuations *emitted to a distance, as by a sudden and spasmodic effort,* and often attended with, or composed of stringy phlegm: afterwards succeeded by the appearance of blood, and then of purulent matter (ulcers forming about the passage).

In respect of the Urine.—Absolute retention of urine, such as might arise from paralysis of the bladder, or else *involuntary and repeated but scanty discharges; cloudy, bloody, dark,* or yellowish-brown urine. The suppression of urine sometimes suddenly alternated with violent and copious but involuntary discharge.

In respect of the Mouth, Muzzle, Tongue, &c.—Brown, blackish, livid, dry, cracked, or tremulous tongue; the membranes of the nose livid; tongue apparently paralyzed; tongue blistered, ulcerated, and coated with whitish adhesive matter; mouth dry—the inside of the mouth and lips covered with pustules and ulcers; the mouth emits an excessively offensive odor; discharge of *bloody matter, which is very offensive, from the mouth and nose; copious discharges of blood* from the mouth and nostrils; *grinding of the teeth;* gangrenous and malignant ulcerations in the throat; the development of a multitude of white vesicles throughout the inside of the mouth; parched condition of the throat, which provokes the animal to seek for drink constantly, with little power to swallow it, and with considerable repugnance apparently to swallowing much at a time; looseness of the teeth.

In respect of the Eyes.—Excoriation of the inner surfaces of the eyelids; granulation of the eyelids; *pustular eruptions on the edges of the eyelids;* ulceration of the eyelids; convulsive protrusion of the eyes; *sunken and dull appearance of the eyes;* contraction of the pupils; *ulcers on the cornea; œdematous swelling of the eyelids* (in the ox or cow), particularly when the animal has been grazed on damp and marshy pastures; palsy of the optic nerve (*gutta serena*); *cancer of the eye*, or general ulceration of the substance of the eye; the eye suffused with a yellow tinge, especially in the corners; the vessels of the eye are distended and red.

In respect of the Disposition.—Excessive anxiety and restlessness, or motionless indifference to all that is passing; keen distress, as depicted in the countenance of the animal; peculiar indolence and apparent dread of exertion; also absence of consciousness in respect of surrounding objects.

In respect of the Appetite.—ABSOLUTE REPUGNANCE TO ALL FOOD —(a very characteristic symptom with the inferior animals, generally, which but rarely refuse all sustenance)—difficulty of deglutition, even of liquids, and incapability of drinking more than a scanty draught at a time.

In respect of the Carcass.—There is *rapid and progressive emaciation, or universal wasting away of the whole frame;* dropsical *puffing, and enlargement of the belly;* swelling of the spleen; distension of the stomach, with flatulency; enlargement of the mesenteric glands (?); putrid flatulency; enlargement of the glands of the groin; the animal will shrink from the touch, if pressure be applied to the loins; *swelling under the jaw;* accumulation of vermin about the body; the membranes generally assume a dull, leaden hue, and the skin adheres to the bone. *Transpiration of cold sweat throughout the frame.*

In respect of Expression.—Dull and anxious appearance; *cadaverous, sunken, and lifeless appearance.*

In respect of Rumination.—*Total suspension.*

In respect of the Extremities.—Swellings of the joints, spreading over the greater portion of the limbs. The development of ulcers and black pustules about the extremities; unwholesome excoriations; the horny substances assume an unnatural hue; there is constant necessity to change the position of the limbs for the sake of relief; from which we may deduce that a species of aching, rheumatic pain prevails; sudden and convulsive twitching, and contraction of the limbs. The appearance of corrosive ulcerations about the feet.

Summary.—Rapid failure of strength; coldness of the body; coldness of the legs and feet; prostration considerable; wasting of flesh; poor, emaciated condition; low fever; difficult breathing; breath short, gasping. Fits resembling asthma, threatening suffocation. Mouth and nose cold. Pulse weak, trembling. Tongue cracked or ulcerated; white, brown, or blackish. Nostrils ulcerated; discharge from the nose thick, mixed with mucus and blood, sometimes very offensive. Eyes dim, glassy-looking; white of the eyes yellow; ulcers on the cornea; swelling of the eyelids; eyelids glued together with the secretion. Skin dry and burning; yellow color of the skin; ulceration; suppuration, with fetid smell; black pustules; scaly eruptions; ulcers which resemble lard, having hard, raised edges. General dropsy of the whole body, or of the legs only. Profuse sweating; cold sweats. The skin is loose and the muscles flabby. Inflammation of the stomach. Evacuations dark, black, scanty, and very offensive; constant attempts to relieve the bowel without effect; dung mixed with froth, slime, or blood. Urine very scanty; thick, dark, bloody, or of a yellow-brown color. Worms.

ASAFŒTIDA.

CHARACTERISTIC SYMPTOMS.

Palpitation of the heart from physical exertion; chorea; inflammation, softening, and curvature of the bones; caries of the bones; diseases of the bones in those who have been mercurialized; ulcers, especially those affecting the bones; ulcers discharge a thin, ichorous, fetid pus; painfulness of the bone to the touch; ulcers with elevated, bluish edges; ozæna, or chronic inflammation and catarrh of the nose, with discharge of greenish and fetid pus; coryza, with violent sneezing; rheumatism of the shoulder; cold swelling around the fetlocks.

AURUM METALLICUM, OR FOLIATUM.

CHARACTERISTIC SYMPTOMS.

In respect of the Skin and External Surface.—Coldness of the whole frame, with dark, livid, or discolored hue of the mucous membranes; angry or passive and fetid ulcers in various parts; gangrenous affections generally, resulting from acute inflammation, or from erroneous treatment of acute inflammations; enlargements about the joints of the knee, hock, &c.; tumors round the joints, about the udder, or along the back; tumors converted into gangrenous ulcerations; profuse perspiration throughout the frame in the morning; *falling off of the hair.*

In respect of the Excrements.—Continued and profuse loose evacuations; obstinate relaxation; the motions peculiarly offensive, and generally charged with more or less blood and phlegm; sometimes also black and very liquid.

In respect of the Pulse.—*Irregular*, small, and *feeble.*

In respect of the Mouth, Throat, &c.—Flow of clear, watery saliva from the mouth, which, however, becomes thick, dark, charged with matter or blood, and exceedingly offensive; the interior of the cheeks swollen, of a deadened, livid color, and ulcerated; ulceration and enlargement of the tonsils; livid ulceration of the gums and of the mouth throughout, emitting a very offensive odor. *Sluggish ulceration.* Inflammation of the tongue; enlargement of the tongue; large red or livid vesicles along the margin and at the base of the tongue, spreading rapidly, and developing virulent ulcerations.

In respect of the Nose.—Swelling of the nose, attended with internal inflammation and ulceration; the formation of black, scabby scales over the interior surfaces of the nostrils; discharge of fetid, dark, or yellowish matter from the nose, becoming more offensive as it gradually grows darker; excessive tenderness of the nose to the external touch.

In respect of the Eyes.—*Superficial ulceration of the cornea;* intense inflammation of the eyes.

In respect of the Head and Neck.—Swelling, and very considerable enlargement of the head and neck; the bony and anterior portions of the head intensely tender; the animal wincing when the slightest indication is afforded of an intention to touch the parts, which would evince that there is *inflammation and ulceration of the bone.*

BARYTA CARBONICA.

CHARACTERISTIC SYMPTOMS.

In respect of the Skin and External Surface.—The skin is *dry*, harsh, *scaly*, &c., emitting a peculiar species of creaking noise with every movement of the animal; if grazed, broken, scratched, or otherwise injured, the healing is *unwholesomely retarded;* shuddering, in which the entire surface of the body is involved; perspiration during rest, and especially at night; perspiration deficient during motion, but exceedingly cold and clammy, with the deposit of a thick *dew* over the coat for many hours *after motion* or *during rest.* Exceeding sensitiveness of air and cold; *staring, dull coat, conveying a particular sensation of dryness and harshness to the touch; subcutaneous heat;* universal tenderness to the touch, the animal *shrinking from contact in any part;* when pressed on the loins the animal moans, and gives strong indications of pain; the hair or wool falls off in quantities; emaciation more or less rapid.

In respect of the Respiratory Organs.—The characteristic symptom consists of a peculiar subdued, difficult, painful, *feeble*, *guttural*, and inward cough.

In respect of the Milk.—We have occasion to notice its manifest *deterioration in quality*, as well as the *inadequate quantity yielded;* the milk thickens very indifferently, has a bad flavor, and is of a bluish hue; it turns sour far more quickly and invariably than milk from a cow in health, and yields but very inferior butter.

In respect of the Procreative Functions.—With respect to the human being the provings seem to establish that there is diminished or suspended desire: with respect to the inferior animals, or, at all events, in regard to horned cattle, the rule is reversed. The *imaginative faculties are peculiarly acute, and the sexual inclinations doubly susceptible,* so much so, indeed, that *pregnancy itself does not subdue the heat.*

In respect of the Appetite.—The inclination to eat is so little altered from that of the state of health as to be likely to mislead a casual observer; sometimes, indeed, we may observe *increased appetite*. As a general rule, however, the animal will continue to feed well for a considerable time, failing, *nevertheless, to make or maintain flesh*. Occasionally, however, an *increased and continual thirst is observable*.

In respect of Rumination.—Retarded, *sluggish*, and *incomplete*.

In respect of the Excrements.—The evacuations are alternately hard, knotty, and insufficient, being detached with much effort and straining, or they are *obstinately relaxed*, resisting every palliative resource; sometimes the presence of worms may be distinguished in the dung.

In respect of the Mouth, Tongue, Nose, &c.—*Dryness or watery salivation;* fissures on the tongue; fetid odor emanating from the mouth; first, thin *watery discharge* from the mouth, *nostrils*, &c.; the discharge is at first *colorless and without smell*, but subsequently becomes mingled *with blood and thick matter, and then emits a very offensive odor;* soreness of the throat, enlargement and redness of the glands of the throat; *sore throat always occasioned by the least chill.*

In respect of the Extremities.—Tottering, uncertain gait, with trembling and yielding of the legs.

In respect of the Movements and Body Generally.—Emaciation more or less rapid, but continually progressive; puffing of the body generally; distension of the belly; *swelling and induration* of glands generally; languor and prostration of strength; *debility of the entire frame;* incapacitation for motion; position generally *drooping*, as if the parts were too heavy; the *animal is compelled to lie down*, or assumes an erect position from time to time, lying down again very soon, but is evidently uneasy and restless in any position; general *nervous sensitiveness;* the senses *oversusceptible* or deficient; the symptoms generally are more distinctly developed on the *left side;* wherefore, in a recumbent position, the animal *lies* on one *side only*.

BELLADONNA.

CHARACTERISTIC SYMPTOMS.

In respect of the Skin and External Surface.—Excessive increase of heat, particularly about the head, with considerable dilatation of the head, neck, and forearm; intense heat and throbbing at the roots of the horns (in cattle), with enlargement of the temporal vessels. Enlargement and increased heat of the glands of the neck, throat, and jaws; heat, vivid redness, and swelling of the parts particularly affected; *acute sensibility of the spine to the external touch;* the skin adheres to the ribs; if examined closely, by parting the wool or hair, the skin will be found suffused with a bright red hue, and of an intense heat; the animal is generally alive to the least touch, and the slightest pressure seems to cause intense pain; staring coat.

In respect of the Movements.—At first there is a sort of drowsy stupor, which, however, is quickly followed by the most violent agitation; furious attacks upon animate or inanimate bodies; the animal plunges wildly against fixed objects; the most violent career is pursued, the tail being arched and the neck stretched forward, oppressed, sluggish, and impeded movement, followed by terrific and supernatural energy; *convulsive motion, sometimes alternated with spasmodic suspension of motion;* sudden loss of power and motion in the whole or parts of the frame—or *incessant motion*, ending *in a recurrence of stupor.*

In respect of the Pulse.—Hurried pulsation simply, or more frequently a quick and bounding, or full, hard, and accelerated pulse; or *oppressed*, diffused, and indistinctly expressed (blended); or small and accelerated. Often, however, the pulsations in the temporal arteries continue full, bounding, and accelerated; violent pulsation of the heart.

In respect of the Respiration.—*Hurried panting breathing;* violent heaving at the flanks, &c., *preceded*, however, with *thick oppressed respiration* in many cases; the breath offensive; signs of suffocation if the throat be but slightly touched.

In respect of the Excrements.—Absence of alvine discharge, or costive, difficult, and partial. Evacuations hard, dry, and almost *black* (in ruminating animals); and equally hard and dry, but *pale* (in the horse). Sometimes, also, frequent, small, dry evacuations, or constant and ineffectual urging.

In respect of Urine.—Thick, turbid, flocculent, whitish, reddish, or very dark urine; or else very clear urine. Sometimes, also, involuntary discharges, in small quantities, or else copious and frequent discharge of clear, limpid water; *bloody urination.*

In respect of the Throat.—Great heat, vivid redness, swelling, and excoriation of the throat, with enlargement and inflammation of the glands of the throat; evident difficulty of deglutition, sometimes with an aversion to fluids.

In respect of the Mouth, Tongue, Teeth, Muzzle, Nostrils, &c.—Great heat and dryness of the mouth, the tongue loaded with white adhesive phlegm; general redness and excessive heat of the tongue; or vivid redness and heat round the margins of the tongue. *The nostrils are exceedingly dilated, and betray a bright scarlet hue round the interior margins;* the muzzle is dry and harsh; foaming at the mouth; grinding of the teeth; much white and adhesive phlegm collected in the mouth and throat; discharges of blood from the mouth.

In respect of the Eyes.—The eyes are bright, sparkling, and inflamed; the pupils dilated; the eye *generally suffused with vivid redness;* protruding, convulsed, or fixed or wavering; the glance is furious; the pupils are sometimes contracted (though rarely), and generally immovable; the eyelids become inflamed and red, and sometimes convulsed and quivering.

In respect of the Disposition.—Wild, destructive, and uncontrollable; the prevalence of fury rendering the animal as dangerous to itself in its ferocity and vindictiveness, as to others; the peculiar antipathies are heightened to an extraordinary degree, as, for instance, that of the ox for the red color; an inclination to attack any object which is in its course, whether animate or inanimate, or frenzy without method or consciousness.

In respect of Expression.—Indicative of great pain, as well as of incoherency; repeated glances at the *flanks*, indicative of intense suffering.

In respect of Sounds.—Wild, loud, or shrill and unusual bellowings and cries.

In respect of Appetite.—Intense thirst, with aversion to drink, or with little capability of drinking; precipitate deglutition of fluids; aversion to food or voracious and unnatural consumption of food.

In respect of the Carcass.—Intense heat, particularly about the crown of the head, the neck, back, and loins, the latter being peculiarly sensitive to the touch; enlargement and inflammation of the vessels generally; enlargement, &c., of the glandular structures in particular—the latter, especially about the neck, throat, and jaws; tottering gait; falling down head foremost.

In respect of the Extremities.—Great prominence of the vessels in the legs; burning heat of the legs; swelling of the legs and feet; uncertain and faltering step, notwithstanding the furious precipitate movements; the knees giving and bending forward under the weight of the body; tremulous condition of the knees; violent plunging with the fore feet; the tail arched, and carried high, and constantly lashing the flanks.

Summary.—Inflammation of the brain and its membranes. Heat about the head. Mad, staggering gait. Wild, furious look. The animal plunges and kicks. Foams at the mouth; attempts to bite. Delirium. Eyes red, inflamed; especially the ball of the eye. Fixed look—pupil dilated. Amaurosis, or dimness of sight; temporary blindness in one eye. Eyes protruded from the sockets. Ulceration of the nostrils. Nostrils dilated. Mouth hot. Mouth, throat, and tongue bright scarlet. Throat sore; ulcerated. Glands enlarged; tender to the touch. Glands swollen; threaten to suppurate. Difficulty of swallowing. Skin of the body red. Bloodvessels of the head and neck enlarged. The spine is sensitive to the touch. Convulsive movements in the whole body. Pulse quick, hurried; often hard and wiry; sometimes full and slow. Evacuations hard, dry, small; pale in color, with urging. Urine thick—dark color.

BORAX.

Employed chiefly for disease of the mouth; aphthæ, or thrush; vesicles on the tongue.

BROMINE.

Croup. Affections of the lungs, especially of the right lung. Difficult breathing. Inflammations of the lungs, pleuro-pneumonia.

BRYONIA ALBA.

CHARACTERISTIC SYMPTOMS,

Considered particularly in respect of Organs connected with the Digestive System, and the Apparatus of Circulation.

In respect of the Excrements.—Scanty and infrequent evacuations; the discharge of hard, dark, lumpy dung in small quantities; dung often slimy, with glutinous phlegm with which it is evacuated; excrements *streaked with blood;* the evacuations are *totally suppressed,* excepting the passage of a small quantity of *liquid* and very *putrid* excrement, which oozes out, or which appears to be ejected with considerable straining and pain; or (with the horse) the excrements are *dry, hard, detached in small quantities*, and of a *yellowish color*, or ash-colored. In some instances, however, there is *violent purging, with hot, painful, straining, corrosive* evacuations, and constant desire, evinced by the movements of the tail.

In respect of the Urine.—Yellow, brown, or bloody; *very hot;* saffron-colored; frequent but scanty discharge of urine, becoming more frequent and less in quantity, and constant effort to pass water. Urine *expelled with great effort and forcing*, deeply colored with blood, or *consisting chiefly of blood.*

In respect of the Pulse.—*Quick*, and *hard pulse*, at first full, degenerating into *smallness*, but persistently *hard*, or very much *accelerated and small;* or, if there be absence of the peculiar tenderness which indicates internal organic inflammation, the pulse is full, *hard*, and accelerated; average number of pulsations (of horses and cattle) from 60 to 70 or 80 in the minute; of dogs from 110 to 120.

In respect of the Movements and Position.—Reluctance to move; *motion evidently causing or increasing pain;* the animal lies upon the right side; suffering is indicated by the constant effort to rest the *muzzle against the flanks;* great restlessness, with inability to move, or dread of motion; *the head is stretched forward; the legs are either close together*, the back being arched and the flanks puckered up, or *they are held apart* (*particularly the hind legs*). Movements indicative of *continual pain*, and *pain throughout the body*, and which seem to indicate a desire for assistance; languor; staggering or tottering carriage; *rapid loss of strength attends the symptoms*, &c., &c.

In respect of the Skin and External Surface.—Coldness of the *ears and legs;* tenderness, and sometimes heat of the belly and flanks; great heat at the root of the horn (in cattle); the flanks heaving; dry heat about the loins; shrinking from the touch at the loins; dry heat throughout the body. Shivering fits, with or without cold sweating; staggering, giddiness, and languor preceding the chills; dark *yellow color of the skin.*

In respect of the Muzzle, Mouth, Tongue, Nose, &c.—Intense *heat and dryness* of the mouth and throat; a *frothy salivation* (*foam*) *about the mouth;* mouth *partly open;* tongue inflamed and *enlarged;* breath *hot;* the *tongue very dry* (of dogs) and *hanging from the mouth;* the mucous membranes of the mouth (and conjunctiva) of a dirty yellowish-red; vomits of yellowish or greenish matter; lips swollen, fissured, and dry; *muzzle very dry and hot;* general swelling of the parts about the mouth; sponginess of the gums; the nose *swollen, hot, and tender; the nostrils distended*, and sometimes of a peculiar inflammatory redness; the interior of the nostrils inflamed and ulcerated.

In respect of the Eyes.—Protruding, inflamed, and of a bright red or yellowish-red hue.

In respect of the Respiratory Apparatus.—Quickened breathing; breath *hot*, oppressed, accelerated, and difficult; sometimes cough; *dry, suffocative* cough; constant *drawing of a deep breath;* burning heat of the chest.

In respect of the Extremities.—Constant trembling of the fore legs; the legs generally *cold* (moderately), but sometimes also characterized *by heat* (*whenever heat of the feet and legs attends the symptoms above describ d*); staggering and yielding of the knees; evident languor and incapability of sustaining the weight of the body; the legs either placed apart or close together, or *drawn up under the body*, sometimes remaining unmoved for a long time (with the exception of the bending of the joints , and sometimes *restlessly but languidly lifted from time to time, a movement evidently occasioned by aching pain.*

Summary.—Breathing oppressed; difficult, or short and catching. Irritation of the bronchial tubes. Rattling of mucus heard on listening at the chest. On taking breath the animal evinces pain; catching stitches; he looks round at his sides, and points his nose to the flank; groans, as if he could not get relief from the pain; he seems unwilling to move. The pain is evidently increased by motion. Tenderness of the body and flanks to pressure. Great weakness on slight movement, or walking a very short distance; a sweat breaks out in patches on the body. Mouth and tongue dry and hot. Ears cold. Cough dry, short, and painful. Pulse quick, hard, wiry, or weak and thready. Dung scanty, or totally suppressed; or a little foul-smelling, dark-colored liquid passes. Urine scanty—dark-brown color; sometimes bloody; and appears to pass with difficulty.

CALCAREA CARBONICA.

Characteristic Symptoms.

In respect of the Skin and External Surface.—Swellings and indurations of the glands; enlargements of joints and other parts; swellings occasioning pain, or which are perfectly insensible; unhealthy state of the skin, slow to heal if injured, and easily provoked to sluggish and obstinate ulceration; eruptions ending in scabbiness, or eruptions of numerous small pimples; corns and other excrescences; lumpy appearance and feel of the skin when the palm is drawn over it, or scurfiness of the skin; *great predisposition to chafing and excoriation of the skin*, which becomes scabby and ulcerates within, instead of drying off and healing; *dryness* and *heat* of the skin *during motion*, followed, *after the least exertion*, by profuse, colliquative sweats *as soon as motion ceases;* periodical sweats appearing in the morning, apparently without any particular cause; sweats upon the chest only, at night; periodical flushings of heat, which pass off quickly; febrile attacks of heat and shivering, which return every day at a regular hour and towards evening, or every third day in the evening; staring, rough, and gloomy coat, or very *limp and glossy hair;* shedding of the hair or wool, *especially of the mane.*

In respect of the Disposition and Temper.—Excessive *timidity;* peculiar irritability and fretfulness; excessive repugnance to exertion of any kind; frowardness, intractability, and obstinacy.

In respect of the Excrements.—With perverse relaxation, discharge of blood from the anus (especially if bright red) during evacuation or after it; obstinate and continued looseness; on the other hand, excessive and obstinate costiveness, and *continued suspension of the dejections*, followed or intersected from time to time by the dejection of small, hard, knotty evacuations, generally containing crude and undigested matters.

In respect of the Urine.—*Overfrequent* discharge, sometimes with blood.

In respect of the Appetite.—Morbid, fanciful, sometimes with total absence of thirst, and at other times with intense and insatiable thirst; or with continued desire to drink, little being swallowed at a time; the animal will leave wholesome food, such as it would prefer when in health, for green, succulent, and unwholesome substances; the appetite is sometimes also voracious but irregular, and the food, which puffs and bloats the animal for a time, seems to fail in nourishing it, or in arresting the gradual emaciation; the appetite is absent altogether.

In respect of Rumination.—Slow, *sluggish, and incomplete*, or totally *suspended.*

In respect of the Milk.—*Involuntary* discharge of milk; deterioration of quality and rapid failure of milk.

In respect of the Movements and Position.—Involuntary limping, or *sudden and unaccountable lameness;* great uneasiness, and constant change of position; repeated shifting from one foot to another; if in an erect position generally standing with one foot *relaxed;* evident want of strength; drooping whether in motion or rest; movements *sluggish and languid; when in rest, intense aversion to be disturbed, or to motion of any kind;* desire to lie down; lying entirely stretched out on the side, as if inanimate, and with the head prostrate and stretched out.

In respect of the Pulse.—Generally *feeble*, accelerated, *small and soft*, during the febrile paroxysms; irregular pulsations of the heart; *fluttering* pulsations.

In respect of the Eyes.—Dilatation of the pupils, dull and inanimate expression of the eyes, or glassy, watery brightness; the eyes very tender of exposure to strong light, and blinking when first turned towards the light; *watery discharge* from the eyes, provoked by the least exposure to light or air, or *continual watery discharge; the sight evidently dim, sometimes almost insensible of objects moving in front of the eyes.*

In respect of the Organs of Generation.—Continued *discharges of blood*, attended with great weakness, following *difficult labor or abortion.*

In respect of the Respiratory Organs.—Feeble, *stifled, internal cough;* short, abrupt, dry cough; cough, with occasional discharges of blood from the mouth and nostrils, or with the discharge of thick, offensive matter; *acute sensitiveness of the chest to external touch or pressure; short*, difficult, or wheezing respiration.

In respect of the Carcass generally.—Puffing and unhealthy swelling or inflation of various parts of the body; distension of the belly after eating; *general emaciation and wasting of the body;* stiffness of the neck; flabbiness of flesh; hollowness of the flanks; elevation and arching of the back; apparently sudden attacks of debility, amounting to paralysis.

In respect of the Extremities.—Swelling and sweating about the legs and feet; distension of the veins of the hind legs in particular; ulcerative soreness of the feet; generally *coldness* of the legs and feet, sometimes alternated with *excessive heat of the frog, and of the adjacent fleshy parts;* or, in other animals, *alternate burning heat* (with *dryness*) and coldness of the feet; stiffness of the legs, and especially of the joints; fungous excrescences about the knees; callous excrescences generally; *paralytic weakness, tottering, or lameness*, suddenly intervening in the midst of motion or labor.

Summary.—Period of dentition; painful cutting of the teeth; abscess; scabby eruptions, which appear in clusters; excoriation of parts chafed by the saddle or harness. This medicine may be employed with advantage while the horse is shedding his coat. Sweating, after but little exercise, especially about the chest; the food does not appear to nourish the body; poor condition; appetite irregular, sometimes lost, at others voracious; general weakness; tottering gait; enlargement of glands; chronic swelling of the joints; dung small in quantity; pale color, and often mixed with food partly digested.

CALCAREA PHOSPHORICA.

CHARACTERISTIC SYMPTOMS.

Lameness; rheumatic affections in the joints. Exostosis. Caries of the bones. Carious ulcers. Frequent emission of large quantities of urine, with languor and debility; dark, sometimes burning urine. Much used to promote the ossification of the callus after fractures; that is, to accelerate bony union

CALENDULA OFFICINALIS.

Calendula is specific for *flesh wounds*, to promote their healing with the least amount of suppuration.

Also for suggillations, bloody and serous infiltrations of the cellular tissue in open wounds and ulcers.

Also for *lacerated wounds*, in which the tissues are torn, and bruised, and ruptured.

Also for *crushed wounds*, or injuries in which the bones are crushed and mixed with the flesh (comminuted wounds). In such cases the pieces of bone must be removed even if amputation be not needed; but this belongs rather to the human subject.

In all cases of injuries, whatever remedy is most appropriate—*Arnica* for bruises, *Calendula* for flesh and lacerated wounds, *Cicuta* and *Staphysagria* for incised and punctured wounds, *Hypericum* for injuries of the nerves, *Symphytum* for fractures of bones—the selected remedy should be administered internally as well as applied in the form of a liniment externally.

CANNABIS SATIVA.

CHARACTERISTIC SYMPTOMS.

In respect of the Organs of Generation.—Redness, swelling, and inflammation of the parts; copious and thick discharge from the parts; *protrusion of the womb* from the bearing, commonly called "*inversion of the womb*," or "*downfall of the calf-bag;*" spasmodic and convulsive labor.

In respect of the Pulse.—Small, wiry, and intermittent; *vibrating* pulsation of the heart communicated to the adjacent parts.

In respect of the Urine.—Straining attendant upon micturition; water expelled with force; urine turbid, and mixed with matter and blood, or *redwater*, in which blood prevails, or is passed almost pure; drop-discharges of bloody urine, or only of blood.

In respect of the Excrements.—Hard, small, and dry evacuations.

In respect of the Movements.—Violent agitation immediately preceding parturition; the animal rapidly changes position; *lies down, and immediately gets up again, leaps wildly, and paws the ground savagely.*

In respect of the Respiratory Organs.—Respiration much *accelerated,* and *snorting.*

In respect of the Eyes.—Lachrymation, more or less profuse; the eyes partially closed; the eyelids swollen, and *bright on the inner side;* streaks of red over the surface of the eye; white specks, more or less opaque, on the surface of the cornea; dimness of the cornea; diminished transparency of the humor; *altered color of the iris;* pupils *excessively contracted;* unusual and *excessive tenderness of light; thickening* of the eyelids; *moon-blindness.*

Principally employed in affections of the bladder, and urinary passages; mucous discharges, and opacity of the cornea. In this latter case it may be used externally as well as internally.

CANTHARIS (CANTHARIDES).

CHARACTERISTIC SYMPTOMS.

In respect of the Organs of Generation.—Constant recurrence and *continuation of heat,* which remains *unallayed by copulation;* swelling of the bearing, and great heat in the rectum, about the region of the bladder; swelling of the neck of the womb, and of the neck of the bladder, evinced by the difficulty in emission of urine, the constant urging, the drop discharges, or observable by examination; inflammation of the womb before and after parturition (the former case distinguishable by the condition of the lamb after birth, which dies in the course of the first two days, and is found to contain watery fluid in the intestinal cavities); *enlargement of the sheath in the male; exceeding tenderness of the region of the bladder, bearing, or even of the flank generally, and liver, to the touch; pulsations, and pulsating vibrations, or thrilling of the parts.*

In respect of the Urine.—Difficult and scanty emission of urine, generally bloody, and often in drop discharges, but *not totally* suspended; emission of pure blood, drop by drop; urine excessively hot and acrid; *very frequent micturition;* the *bladder distended with urine,* which may be perceived by feeling the parts under the rectum: urine sometimes very pale, with increased discharge; urine escaping *by jets,* with *difficulty and pain* (evinced by the movements and cries of the animal), and suddenly profuse; clear, watery urine, or *saffron-yellow.*

In respect of the Excrements.—Hard, dry, knotty, hot, and as if burnt; very pale, or dark, according to the difference of animals; discharge of white, frothy matter, before, after, or without evacuation of excrement; *evacuation of bloody liquid excrements,* without dislodgment of the dry, concreted charge of the rectum; discharge of white, threadlike substances, and blood or phlegm; bloody evacuations generally, when attended with great heat about the region of the bladder, liver, and of the flank generally.

In respect of Organs connected with the Digestive Apparatus.—Inflammation of the liver; tenderness and heat of the whole region of the stomach; vomits of yellow or greenish matter.

In respect of the Movements and Position.—The hind legs *apart;* extreme uneasiness, and constant change of position ; tremulous a tion of the hind legs and quarters ; the animal appears puckered up ; the r of the back is raised ; the animal constantly turns from side to side, l pitifully at its flanks, and moans or howls ; the animal is very spiteful irritable, and, if a dog, is disposed to bite even master or attendant, or *shr from inspection.*

In respect of the Skin.—*Dry*, hot, and *hard*, especially about urinary organs.

In respect of the Pulse.—Quick and *noisy.*

In respect of the Appetite.—Intense and parching thirst ; the ani drinks *copiously*, and with peculiar *eagerness;* there is little inclination to

In respect of the Muzzle, Mouth, Tongue, Throat, &c.—Mu and nose *dry*, *hot*, and *hard;* sometimes (when the liver is involved) suff with a *more or less intense yellow hue;* the gums *yellow*, *very sensitive*, an if *scalded;* the *tongue swollen, and protruding from the mouth* (mentioned of dog) ; foaming at the mouth ; frothy salivation, or dryness of the mouth.

In respect of the Eyes.—Yellow tinge, more or less intense, of *conjunctiva and iris.*

Summary.—Affections of the bladder ; urinary and generative org Tenderness about the region of the bladder, and across the loins, over the neys ; sometimes extending to the liver. Constant straining to pass ur Urine dark in color, or mixed with blood. Constant attempt to pass ur without effect. Urine passed in very small quantity at a time. Bladder f distended with urine ; yet not more than a drop or two can be passed. P intense—the animal moans , the dog howls. Skin of the mouth hot, dry, coriated, or ulcerated. Foaming from the mouth. Appetite lost ; const desire for drink.

CARBOLIC ACID.

This new and most invaluable remedy as an antiseptic seems to comb the best qualities of Arsenicum and Creasote in some respects, and to s pass them both in many others.

Foot Rot in sheep comes within its sphere. Also thrush of the feet.

Glanders has been cured by Carbolic acid alone.

Farcy should be treated with this remedy, both internally and ex nally.

Important in *malignant, putrid sore throat.*

Mange will yield more readily to the external application of Carbolic a after the indicated constitutional remedy has been given for some time.

Fetid Discharges from the head, and *foul and offensive ulcerations* requ the external use of this drug, dissolved in proportion of one-tenth, to o thirtieth of soft water.

All *infection-germs* lurking in the system may be destroyed by the free of Carbolic acid solution, one drachm of the strong solution (of which e drop represents a grain of the original drug) may be mixed thoroughly in pint of water, and one tablespoonful, or four tablespoonfuls, may be given a dose, according to the size of the horse or other animal. Thus while it m not always be possible to cure a horse attacked with glanders, nor desirable even to attempt it in many cases, this powerful *antiseptic* may be relied on to destroy the germs of the disease already taken into the system. Taken in poisonous doses it will destroy all the vitality of the blood ; but in smaller doses its action is expended upon the infectious germs which may be present in the circulation.

Lice and all other minute insects upon the external surface or burrowing may be effectually removed by bathing the affected parts with the first decimal dilution of the strong solution of Carbolic acid. *Proud flesh* may be reduced in the same manner ; and *indolent ulcers*, especially if tending to putridity or gangrene, may be made to assume a more natural appearance ; to put forth healthy granulations.

Fistulous Openings may be made to heal up by injecting them with a weak solution of Carbolic acid.

Dr. Foust, of Poughkeepsie, reports the use of Carbolic acid in the *Epidemic Horse Distemper of* 1872, with great success, losing but two horses out of four hundred ; while Dr. John Shaw, of New York, reports the loss of only four horses out of nine hundred and sixty, treated with this remedy for the same disease. Ten drops were given once a day to each horse.

A horse affected with *itch*, treated for five months ineffectually by an allopath, was cured in three weeks by Dr. Foust ; half an ounce of Carbolic acid was dissolved in a quart of water, the horse was washed with this, and Sulphur given internally.

In *glanders*, Dr. Foust found Carbolic acid useful, given in ten-drop doses in a little water, until the appearance of a decided change for the better ; then treating the case as an ordinary chronic catarrh.

In *mallenders* he found Carbolic acid lotion (Carbolic acid one part, Glycerin four parts) perfectly curative.

For *worms* in horses, Dr. Foust gave the acid in ten-drop doses, morning and evening, with the result of destroying the worms, and *causing ulceration in the interior of the mouth.* Under the influence of Mercurius and Graphites, succeeded by a few doses of Sulphur, the horse made a good recovery.

In *leucorrhœa*, in alternation with Pulsatilla, Dr. Foust found Carbolic acid equally effective.

CARBO VEGETABILIS.

CHARACTERISTIC SYMPTOMS.

In respect of the Skin and External Surface.—Sluggish, *gangrenous*, and *fetid ulcers ;* ulcers which are easily provoked to bleed, or which discharge blood mixed with offensive, thick, and virulent matter. Raw and sluggish abscesses, internal or external ; sensible vibrating throbbings in various parts of the body ; *apparent insensibility of the external surface* to the *touch*, or to *pressure ;* acrid or *cold sweats ; general shivering.*

In respect of the Pulse.—*Soft* and yielding, or *imperceptible* pulse.

In respect of the Movements.—Incapacitation, dulness, repugnance to motion of any kind ; slow and retarded motion ; absolute lethargy ; deep and drowsy tranquillity interrupted only by a sudden starting or twitching of various parts.

In respect of the Appetite.—Thirst only at certain periods, and especially during the cold fits of fever, otherwise equal absence of thirst or hunger unnatural *voracity*, followed by great *distension of the belly* (*and of the rumen*) Eating provokes flushes of heat, or profuse perspiration without heat.

In respect of the Excrements.—Obstinate and continued looseness attended with rapid loss of strength ; liquid watery evacuations ; charged with viscid phlegm or matter, and of an excessively *putrid odor*, as if arising from *organic decomposition ;* involuntary evacuations, smelling like *rotten carrion* evacuations followed by the gathering together or puckering up of the body Emission of worms in the excrements ; suspension of evacuations.

In respect of the Urine.—Dark-colored offensive urine, or *dark* and *cloudy* urine ; frequent and involuntary micturition ; urine sometimes very copious, watery, and clear.

In respect of the Organs of Generation.—*Extraordinary increase and continuance of heat or desire, as well as peculiar and morbid excitability of the genital functions, whilst all other functions and faculties are failing ;* copulation *unproductive*, *unsatiating*, or leading to abortion.

In respect of the Muzzle, Mouth, Teeth, Throat, Nose, &c.—The gums are ulcerated, *retracted*, and *detached from the teeth ;* the *teeth* are affected with a *continued obstinate looseness*, which resists all treatment. The gums and teeth are readily *provoked to bleed*, and the bleeding often occurs without any apparent or immediate cause ; the gums are puffed, discolored, and unhealthy, conveying an idea of decomposition to the touch ; the interior of the mouth and the tongue are *rough*,—sometimes dry, and sometimes filled with a clear watery fluid ; watery salivation *and involuntary discharge of clear saliva from the mouth.* The *muzzle* is dry, cracked, and scaly ; sometimes, also, *hot* or *yellow.* The *tongue* appears *immovable*, *as if paralyzed ;* rattling of phlegm in the throat in breathing ; *swelling*, and *livid hue of the throat ; heat and dryness of the nostrils*, sometimes succeeded by continued watery, hot, and acrid discharge, or continued and obstinate discharge of thin watery acrid matter from the nostrils ; *discharges of blood from the nose*, which occur *frequently*, and which are *difficult to arrest.*

In respect of the Ears.—Excessive heat at the base of the ear ; the ears are fixed and motionless ; *redness*, *heat*, *or even ulceration of the ears* (the head being carried low, generally a little on one side, and an occasional attempt being made by the animal to shake the head, which, however, evidently causes great pain) ; *deficiency of ear-wax* (which in browsing animals, especially, should be more abundant) ; the accumulatien of *very thick offensive matter in the cavity of the ear.*

In respect of the Respiratory Apparatus.—Excessive shortness, oppression, and difficulty of breathing, occasioned or aggravated by the slightest motion ; low, feeble, internal cough ; husky cough, and husky or apparently obstructed breathing, as from the presence of stagnant matter in the air-tubes. Obstinate *chronic cough ; thick wind.*

In respect of the Extremities.—Ulceration of the extremities ; the appearance of sluggish, obstinate, and offensive sores on the fleshy parts about the feet ; ulcers of a very offensive character about the legs ; apparent insensibility of the extremities to the touch, or *great tenderness, as if there were internal ulceration ;* relaxation of the muscles ; utter inability to move, or paralytic debility; general coldness of the extremities; sometimes, however, with intervening heat, especially of the fleshy parts at the bottom of the feet.

Especially useful for painful windy colic; constant discharge of wind from bowels.—See Lycopodium.

CAUSTICUM.

CHARACTERISTIC SYMPTOMS.

In respect of the Eyes.—Interior redness of the eyelids and of the conjunctiva, redness and heat of the corners of the eye; swelling and heat of the eyelids; the eyes become agglutinated by the exudation of a thick adhesive matter. During the night the eyes are *half open, or are opened with difficulty;* the sight becomes very suddenly obscured; *callous excrescences in the vicinity of the eyes;* the eyelids are observed to quiver as if there were pricking pain; extreme tenderness of light; *the eyelids, and even the eyes, become ulcerated—the animal is observed to blink, and to start from ordinary objects; it approaches its food even with great caution, and by first extending the muzzle and sniffing at it;* white specks, more or less opaque, upon the surface of the cornea; dimness of the eye, as if a film were drawn over it; red streaks across the conjunctiva; discoloration of the cornea and iris; cataract; *contraction of the pupils;* watery and continued discharge from the eyes.

In respect of the Skin.—Casting off of the hair or wool; shivering; sweat *in the open air*, and *during motion.*

In respect of the Ears.—Accumulation of fetid matter in the cavity of the ears.

In respect of the Muzzle, Mouth, Teeth, Nose, &c.—Eruptions or excrescences on the extremity of the nose; continued obstruction of the nose distinguishable by the breathing, which is either effected through the mouth (partly open), when the animal will be frequently interrupted during eating or drinking, to draw a heavy breath; or else the *breath is snorting and noisy;* frequent fits of *sneezing*, especially in the morning; the mouth is dry or filled with phlegm; the inner side of the lips is ulcerated; *soreness of the throat, with constant effort at deglutition; grinding of the teeth.*

In respect of the Appetite.—Burning thirst and eagerness to swallow cold water, which provokes the return of the symptoms. Sometimes an apparent eagerness to feed, followed by *immediate satiation.*

In respect of the Excrements.—Evacuations very dry, hard, *small*, and *insufficient*, accompanied with constant desire to rub, or even lacerate, the parts, *owing to constant and irritative itching.*

In respect of the Urine.—Urine often charged with filmy or stringy substances; very turbid and even bloody; or profuse, watery, and clear; urine very *pungent* and *acrid*, and *causing great soreness of the parts; urine discharged involuntarily*, with every effort, such as sudden movement, sneezing, coughing, and the like.

In respect of the Movements.—Tremulous motion; sudden lameness; excessive irritation and constant uneasiness; frequent or *restless change of position;* sudden jerking and convulsive motions throughout the body.

In respect of the Respiratory Apparatus.—Deep *hollow barking* cough.

In respect of the Extremities.—The formation of *vesicular festers*, sudden inability to move, or to continue in an erect position.

CHAMOMILLA VULGARIS.

CHARACTERISTIC SYMPTOMS.

In respect of the Movements (without distinct constitutional symptoms).—Extreme restlessness, moving from one place to another; quickly changing the position; gathering the body together; curling up of the body (mentioned of dogs); continual uneasiness, with a peculiar moan, lowing, howl, or yelp, indicative of pain (all these being symptoms of colicky affections); lying down and immediately rising again; striking at the belly with the feet; pawing the ground; snapping at the belly with the muzzle. The animal keeps apart, seeks a sheltered place, and either continues constantly and restlessly moving or remains quite motionless.

In respect of the Excrements.—Relaxed liquid evacuations, either more or less mixed with phlegm or not; evacuations in general more copious and less consistent than in a state of health; *diarrhœa;* obstinate purging; frothy evacuations; evacuations mingled with stringy or filmy white substances, and very frequent, fluid, and copious; or reactionary costiveness.

In respect of the Skin, and External Surface.—Roughness and harshness of the skin; staring coat, general heat of the skin; partial flushes of heat, alternated with chills; heat, particularly of the head, root of the ears (or the ears are cold), and of the horns, &c., at night; yellowness of the skin evinced in some parts; with the worst febrile symptoms we may remark yellowness even extending to the hair, scaly eruption, and excessive irritation More or less roughness of the coat.

In respect of the Muzzle, Mouth, Tongue, Teeth, Nose, &c.—The muzzle either healthy, or heated and dry; the tongue convulsively contorted, dry and hot; or fissured, and coated yellow; the mouth dry and hot; the interior of the cheeks red and swollen; or else one side burning, red, and swollen, and the other unaffected; yellowness of the surface about the mouth; the muzzle dry and fissured, and the adjacent parts, particularly about the nostrils, swollen; yellowness of the internal surface of the mouth; the teeth are loosened; the glands of the lower jaw swollen and inflamed, and very tender to the touch; the nose is red, hot, and irritated, and afterwards affected with copious discharge, or with absolute suspension of any discharge; scent very acute.

In respect of the Urine.—Natural, turbid, or suffused with a saffron-yellow tinge.

In respect of the Pulse.—Either natural or quick and hard; hard and accelerated pulsation of the heart.

In respect of the Disposition.—Fretful, irritable, and unmanageable; apathetic stupor, or often a spiteful and vindictive temper; dull, inanimate, and depressed.

In respect of the Appetite.—Diminished, irregular, and morbid want of appetite; desire and preference for unwholesome food; excessive eagerness to swallow *cold* drinks; prevalence of thirst. Distension of the belly after eating and drinking.

In respect of the Digestive Functions Generally.—Evident irregularity of digestion; emission of flatulence, upwards and downwards; excessive flatulence, with constant agitation in the intestines; spasmodic pains (flatulent or spasmodic colic) evinced by the sudden gathering together of the animal, by the raising of the back, and the drawing together of the legs; yellows. Vomiting of sour-smelling, acrid, yellow or greenish substances; vomiting of phlegm, or of undigested matters.

In respect of the Milk.—Viscid, stringy appearance of the milk, yellow tinge of the milk; unnatural drying or diminution of the milk; inflammation of the udder; hard knotty tumors within the udder; the teats are inflamed, and the discharge of milk is suppressed.

In respect of the Organs of Generation.—Weakness, inadequacy, or suppression of the labor pains (especially in dry cold weather, or with exposure); excessive restlessness, anxiety, and frowardness; swelling of the vagina, occasioned by retention of milk and contraction of the lacteal vessels; swelling of the glands of the passage.

In respect of the Eyes.—Contraction of the pupils; spasmodic clenching, and dryness or quivering of the eyelids; redness of the eyes; yellowness of the eyes; suffused yellow hue about the eyelids.

In respect of the Respiratory Apparatus.—Dry cough, occasioned or aggravated by the pressure of the throat in the vicinity of the air-passages; hoarse and noisy respiration; suffocative cough; cough always provoked by being suddenly disturbed, especially if the animal be tranquil and recumbent at the time.

In respect of the Extremities.—Cracking in the joints; the development of tumors about the joints of the legs, especially about the knee and hock; tumors aggravated by a recumbent position.

Often required for *diarrhœa*, especially of the smaller animals; for *jaundice* shown by yellowness of the eyes, and for constant, short, hacking cough.

CHINA, OR CINCHONA OFFICINALIS.

Characteristic Symptoms.

In respect of the Skin and External Surface.—Flabbiness, with suffused yellow hue of the skin observable in the bare parts, or by the parting of the hair; roughness of the hair; coldness of the greater part of the body, with *heat about the head;* falling off of the hair or wool; greasy perspiration; profuse sweating at night; sweating during sleep, or easily provoked by movement; violent fits of shivering, with coldness of the extremities, the shivering provoked or aggravated by cold drinks; periodical attacks of shivering, alternated with flushes of heat, and generally recurring between noon and sunset; sweat provoked about the edge of the neck, *under the mane and along the back,* by the least exertion; swellings, as produced by the presence of water, either throughout the frame or in particular parts; *general unhealthy appearance of the skin*, puffed or flaccid, with a staring coat, &c.; the skin dry and *distended, receiving and retaining for some time an impression from pressure; symptoms of this kind following the sudden disappearance of a mangy or other cutaneous eruption, are particularly characteristic.* Gradual distension of the whole circumference of the stomach, and periodical enlargement or puffiness of the limbs; drooping of the belly, and hollowness of the flanks; rapid and complete emaciation and wasting of the body, the skin cleaving to the bones; sweat of a peculiar and disagreeable smell; the *ears erect and motionless.*

In respect of the Pulse.—Generally small and weak; or *weak, irregular*, small and *accelerated;* or, again, very *languid*, soft, and small; pulsations of the heart sometimes scarcely perceptible.

In respect of the Excrements.—Alternate costiveness and diarrhœa; watery, slimy, and yellowish evacuations; *relaxed evacuations, characterized by the discharge of food totally undigested;* or else, evacuations emitted with evident pain, and being hard, dry, and scanty, followed or accompanied by severe urging, soreness, and by protrusion of the rectum; after which, if not from the onset, the purging sets in, the evacuations being discharged in a *sudden jet with force*, so as to cast them to a distance; evacuations mingled with stringy and adhesive phlegm, forming long threads; blood and phlegm mingled with the evacuations, or subsequently with very offensive matter; excessively copious and liquid evacuations after eating or drinking; frothy dejections.

In respect of the Urine.—Slow and apparently powerless discharge of urine, the stream rather trickling down than being ejected; turbid, reddish, or saffron-colored urine; emission of blood instead of urine; frequent and copious discharge of clear limpid urine.

In respect of the Movements.—Uneasiness of particular parts, and repeated change of their position; tremulous, weak, and faltering movements; reeling gait; apparent toppling, as if the body were too heavy; languid and dispirited movements; movements indicative of acute sensitiveness of particular parts, or of the surface generally, when touched; general dislike to exertion; the legs gathered together under the belly.

In respect of the Disposition.—Dull and depressed, or apathetic and indifferent, or excessively sensitive and restless.

In respect of the Appetite.—Gradual loss of appetite with the progress of disease, with or without excessive thirst; apparent longing for various kinds of food, with inability to eat them when placed within reach; continual and burning thirst; continual inclination to drink, little being swallowed at a time; whilst eating, the animal will rest its neck on the manger, and will masticate slowly, languidly, and imperfectly.

In respect of the Muzzle, Mouth, Tongue, Nose, &c.—The membranes surrounding the mouth and nostrils pale and discolored; the tongue covered with a yellowish fur, also frequently blackish and fissured; the teeth very sensitive to the touch, pressure on the crown of the teeth evidently causing great pain; throat dry and sometimes swollen; mouth generally dry and often sticky; interior of the nostrils of a leaden or yellowish unhealthy hue.

In respect of the Eyes.—Pupils exceedingly dilated, dull, *immovable*, and apparently little susceptible of external impressions; the conjunctiva of a pale yellowish tinge; the membranes generally of a paler or less vivid color than when in a healthy condition; dull, leaden, filmy appearance of the eyes.

In respect of the Extremities.—Flaccidity of the muscles; debilitation of the limbs; uncertain and wavering action and coldness; the coldness of the extremities always characterizes the aggravation of the other constitutional symptoms.

Often needed for diarrhœa, jaundice, disease of the liver, weakness, dropsy of the belly, shiverings like ague fits.

CICUTA VIROSA.

CHARACTERISTIC SYMPTOMS.

Fits; epilepsy; violent spasms, especially those which come on after wounds, and lead to *lockjaw*, or the lockjaw may come on without previous spasm; grinding of the teeth; violent attacks of vertigo; the patient falls down; acts on the brain as Nux vomica does on the spinal cord, in producing spasms.

CIMICIFUGA RACEMOSA.

CHARACTERISTIC SYMPTOMS.

One of the most valuable of the new remedies, Cimicifuga takes the first rank in the treatment of *chorea*, or St. Vitus's dance; compare Ignatia.

Myalgia and *pleurodynia*, or rheumatic neuralgia of the side, chest-founder, as it is sometimes called, will often yield to Cimicifuga.

Rheumatism (muscular, nervous) of the lumbar regions (uterine rheumatism in the human subject), with weakness and trembling, and even spasmodic action of the muscles. In rheumatic affections of the heart it is often found useful; palpitation of the heart.

To prevent miscarriage in the human subject, it has been given with great success, especially in rheumatic patients.

Dry cough; urine pale and abundant; stiffness of the neck and back.

May be employed to facilitate *delivery* in calving in cows; given in ten-drop doses, night and morning, for a week or two before the time.

In respect of the Pulse.—Cimicifuga reduces the pulse, and makes it irregular; pulse quick and weak. Valuable in rheumatic fever.

In respect of the Head and Eyes.—Dulness and heaviness of the head and eyes, as if caused by a cold. Indicated in rheumatic and neuralgic affections of the eyes.

In respect of the Nose.—Sneezing; frequent sneezing and fluent coryza; abundant coryza, of whitish mucus; profuse coryza in the forenoon; very profuse, greenish, and slightly sanguineous coryza. Indicated in acute rheumatism, catarrhal attacks, with pains in the limbs, chilliness, heat, and fluent, watery coryza.

In respect of the Mouth and Throat.—Offensive breath; dryness and soreness of the lips; swelling of the back part of the tongue; root of the tongue and fauces swollen; dryness, soreness, and inflammation of the throat; difficulty of swallowing.

In respect of Appetite.—Loss of appetite.

In respect of Abdomen and Stool.—Rumbling of flatulence; periodic colic, relieved by stool; constipation; fæces hard and dry; scanty diarrhœa, with straining; rheumatic constipation.

In respect of the Urine.—Increased flow of pale, watery urine.

In respect of the Chest.—Short, dry, hacking cough; pleurodynia, or false pleurisy; palpitation of the heart.

In respect of the Extremities.—Cimicifuga is most serviceable in articular rheumatism of the lower extremities, with much swelling and heat of the affected parts.

CINA.

CHARACTERISTIC SYMPTOMS.

In respect of the Skin and External Surface.—The coat rough and staring; general emaciation, unaffected or unmodified by abundance or quality of food; drying, parching, and puckering of the skin, which, as the animal becomes lank and lean, adheres *closely to the bones;* the hair parted into different directions, and irregularly turned all ways, by the dry, hard, and resisting scales of the scarf skin; incorrigible chilliness.

In respect of the Movements.—The animal paws and scratches the ground, and strikes at the belly with the feet or muzzle; excessive uneasiness and restlessness; the animal draws itself together, or (the dog) curls itself up, remaining, however, but a very short time quiet. The movements are, in general, indicative of griping and colicky pains; the tail is arched, and constantly agitated; frequent fits, with convulsions, loss of consciousness, and peculiar cries and contortions.

In respect of the Excrements.—Alternate costiveness and diarrhœa; discharge of worms (the long white worm or *lumbricus*, and the threadworm or *ascaris*) in the evacuations; constant and evident irritation in the anus, especially before and after the evacuations, evinced by the motions of the tail, above described, and by the effort which the animal makes to reach, bite, or rub the parts.

In respect of the Appetite.—The appetite is increased, voracious, and morbid; the food is consumed eagerly, and without proper mastication; there is reactionary hunger shortly after eating, and the animal gorges, but never seems satisfied. There is little choice in the selection of food, or else desire for succulent herbage or rich food. In general, much thirst is present.

In respect of the Eyes.—Convulsive twitching of the adjacent muscles; dilatation of the pupils.

In respect of the Respiratory Apparatus.—Dry, short, interrupted cough, generally followed by sounds expressive of pain or uneasiness; the breath is hot and offensive; coughing is generally provoked by drawing a long breath; disposition to frequent deep and long inspiration, occasioned by the constant oppression and pinched sensation of the chest.

In respect of the Carcass Generally.—Gradual and excessive emaciation; stinted growth of young animals; periodical and intermittent fever.

In respect of the Teeth and Tongue.—Grinding of the teeth; and the tongue generally clean.

In respect of the Pulse.—During the fever stages, we may observe a pulse considerably accelerated, but weak and small; at other times it will return nearly to the standard of health.

Especially useful for animals affected with worms, roundworms, or pinworms. Give in alternation with Calcarea or Sulphur.

COCCULUS.

CHARACTERISTIC SYMPTOMS.

In respect of the Skin and External Surface.—Upon close examination we shall find the skin and membranes generally paler than in a state of health; the skin is intensely hot to the touch, whilst the animal's sensation of coldness will be evinced by his crouching, withdrawing from a current of air, huddling himself up in a corner, or even, if possible, seeking the fire for warmth; eruptions of hard lumps or pimples, surrounded by a red ring; perspiration easily provoked by motion; considerable itching and irritation of the skin, especially towards night (evinced by the animal's inclination to scratch and rub itself); convulsive trembling of the head in particular; swelling and induration of the glands; twitching, jerking, convulsive movements in various parts.

In respect of the Eyes.—The ball of the eye is convulsively turned; the pupils are dilated, the eyes protrude, and have a peculiarly glittering appearance; the eyelids are inflamed, and there is a watery or thickish discharge, wherewith the lids adhere, and the animal has some difficulty in opening its eyes; the vessels of the eyes have a darkish and somewhat turgid appearance; twitchings in the eyelids.

In respect of the Muzzle, Mouth, Throat, Nose, &c.—Thin and watery, or thick and purulent, ulcerative discharge from the nose; the mouth is very dry, but there is no particular degree of thirst; champing of the lower jaw; foaming at the mouth, generally the precursor of a serious fit; the throat is generally very dry.

In respect of the Excrements.—Constipation, or, if the contrary, the presence of much phlegm, and even blood will characterize the looseness; if relaxed, also, the phlegm and blood will soon predominate, and the evacuations will become insupportably offensive.

In respect of the Respiratory Apparatus.—Close, *condensed, husky* cough; or wearisome cough; cough which recurs in paroxysms at particular periods; cough as if from stifling; interruption, or temporary suspension of breath.

In respect of the Organs of Generation.—Excessive excitability, with constant and protracted heat.

In respect of the Digestive Functions.—Proneness to retching or vomiting, accompanied with wavering and incapability of walking; sickness, with drivelling of saliva; distension of the belly, with flatulency; gradual and progressive loss of condition; emaciation, spasms, and convulsions.

In respect of the Extremities.—Convulsive movements of the limbs; catching and twitching of the muscles and tendons; gradual and progressive loss of condition; spasmodic contraction and serration of various parts of the body.

In respect of the Appetite.—Gradual deterioration of the appetite; increasing thirst.

In respect of Disposition.—Gloomy, morose, and abstracted humor; apparent unconsciousness of the presence of ordinary attendants; the animal pays little or no regard to the voices which it is accustomed to obey.

COLCHICUM AUTUMNALE.

CHARACTERISTIC SYMPTOMS.

In respect of the Skin and External Surface.—Alternate heat and coldness, particularly of the extremities, in which coldness, however, is predominant; the hair stands on end when the animal proceeds to micturate; swelling and puffiness of the belly and of the body generally; dropsical swellings.

In respect of the Excrements.—Constipation; hard, difficult, and knotty fæces or suppressed evacuations; slow, insufficient, and painful or difficult evacuations; or, sometimes, involuntary discharge; protrusion of the terminal intestine; sometimes, also, very relaxed evacuations, mingled with blood and phlegm; evacuations preceded and followed by severe colicky pains, as evinced by the movements.

In respect of the Urine.—*Scanty and very red;* insufficient discharge of urine of a dark or bloody hue; discharge of urine, accompanied with evident straining and painful urging; sometimes, also, constant inclination to pass water, with increased emission of clear, limpid urine.

In respect of the Movements.—Uneasy and constant change of position; the animal is constantly rolling itself, pawing and scratching the ground, stamping with the hind feet; the legs are alternately stretched out and drawn up close to the belly; the animal lies down, but quickly and abruptly gets up again, turns uneasily from one side to the other, or seeks to huddle itself together in a corner.

In respect of the Appetite and Rumination.—Diminished appetite and imperfect rumination; or morbid, voracious, and unnatural hunger, without proper rumination; increased thirst.

In respect of the Tongue.—Rigidity and apparent insensibility.

In respect of the Extremities.—Torpid condition and semi-absence of sensation in the extremities; heat and swelling of the legs, or swelling with coldness of the legs; the legs are distended with water, and retain an impression after pressure; the limbs are alternately hot and cold; swelling of the fore legs only.

In respect of the Carcass.—Puffiness, swelling, and *flaccidity;* distension of the belly with wind; the stomach is exceedingly tender of the touch.

Chiefly used for rheumatism, acute pains, distension of the abdomen, flatulent colic; specific for dysentery with mucous (white) stools.

COLOCYNTH.

CHARACTERISTIC SYMPTOMS.

In respect of the Tongue.—Burning redness of the tip.

In respect of the Stomach and Abdomen.—Pain in the stomach after eating; colic and diarrhœa after taking food; griping colic in the abdomen; terrible colic; sudden colic pains in the belly, with distension; discharge of urine; gradually increasing constriction of the bowels.

In respect of the Stool.—Diarrhœa, with straining; viscid, doughy, pap-like stools; bloody stools; dysentery; dysentery, or diarrhœa renewed always after food or drink.

In respect of the Urine.—Difficulty of passing the urine; dysuria, straining, worse before, during, and after urinating; frequent, almost incessant desire to pass the urine, but very little is passed; urine becomes turbid after standing.

In respect of the Extremities.—Heaviness and trembling of the limbs; rheumatism and rheumatic pains in hip, knee, and upper portion of the leg; cramps and painful contractions of the muscles of every part of the body.

A most important remedy in violent colic, with distension or flatulent swelling and painful sensitiveness of the abdomen and bowels, made worse by eating and drinking, and accompanied by diarrhœic or dysenteric straining.

CONIUM.

CHARACTERISTIC SYMPTOMS.

In respect of the Pulse.—Retarded and sluggish, tremulous, or barely perceptible pulse.

In respect of the Skin and External Surface.—Flaccid, flabby, and unhealthy condition of the skin; livid color of the skin; eruptions of various kinds, provoked by excessive exertion; falling off of the hair, &c.; pustulous, scaly, and scurfy eruptions on the skin; ulcers emitting a blackish or bloody discharge; ulcers which assume a sluggish, obstinate, and gangrenous character; discolorations, having the appearance of bruises, observable upon close examination of the skin; swelling and permanent enlargement of the glands generally; hard swellings; great diminution of the natural heat; enlargement of the bones (of the limbs), attended with excessive tenderness to the touch, indicating ulceration of the bones; offensive, acrid sweats in particular parts of the body, but not general sweating.

In respect of the Stomach and Intestines.—Noise and rumbling of flatulency in the intestines; sudden and violent expulsion of wind; distension of the stomach with wind; spasmodic and colicky pains, evinced by the movements of the animal; in some animals vomiting of phlegm and food; excessive weakness of the digestive functions, evinced by the immediate and undigested passage of food, by the ready satiation of the appetite, and by the swelling and distension of the stomach.

In respect of the Appetite.—Absence of appetite or voracious an morbid hunger, which is quickly satiated, but which returns immediately afte eating; with slow fever, total absence of appetite.

In respect of the Nose.—Purulent and fetid discharge from the nose accumulation of thick, viscid, offensive matter in the nostrils, suddenly ejecte by violent sneezing; frequent sneezing; the nostrils are of a livid or grayis hue.

In respect of the Muzzle, Mouth, Tongue, &c.—The gums ar swollen; there is extravasation of blood, with purplish hue about the gums the gums are easily provoked to bleed; the mouth is dry or salivated; th tongue is rigid, motionless, and swollen; the muzzle is usually dry and fissured, and of an unnatural leaden hue.

In respect of the Excrements.—Loose evacuations of undigested food obstinate, exhausting, and continued diarrhœa; or constipated motions accompanied with excessive urging, or urging without effectual evacuation; o bullety, hard, and difficult evacuations at distant intervals; tremulous, tottering, and debilitated condition *succeeding the evacuations*, which are also followed with feeble, tremulous, and irregular pulsations of the heart.

In respect of the Urine, and Urinary Organs.—Red, turbid, whitish, flocculent, or stringy urine; writhing and wincing with pain during emission; frequent emission at night; copious, clear, and watery urine; sudden interruption of the stream before the completion of the discharge; very frequent staling, which is almost involuntary; swelling of the sheath; swelling and induration of the canal both in the male and female; swelling and induration of the glands connected with these organs.

In respect of the Organs of Generation.—Protracted, continued, but unproductive heat; coition brief and inadequate; *spontaneous pollutions.*

In respect of the Eyes.—Yellow suffusion of the sclerotica; dull, filmy, glazed, and protruding eyes; wavering and uncertain glance of the eye; sudden dimness of sight (evinced by the movement and direction of the animal) upon being first exposed to strong light; chronic affections of the eyes generally; strong light wounds the eyes, which are partly closed; spots more or less white and opaque upon the cornea; discoloration of the cornea and iris; unnatural conditions of sight; the eruption of pimples and vesicles upon the eyelids; soreness and sluggish ulceration of the eyes and eyelids; discharge of watery fluid from the eyes.

In respect of the Respiratory Organs.—Convulsive cough; continued dry and suffocative cough; cough aggravated in a recumbent position; difficult, sluggish, and languid breathing; shortness of breath induced by the least exertion.

In respect of the Extremities.—Swelling of the joints, enlargements, splints, and other affections of the bones; excessive languor of the limbs; rigidity and inactivity of the joints; dropsical and other swellings; excessive coldness and apparent insensibility of legs and feet.

In respect of the Milk.—Spontaneous discharge of milk; the milk constantly oozing from the teats; scanty supply of milk obtained by drawing; the milk is much deteriorated in quality as well as diminished in quantity.

Enlarged glands; old contusions, and their consequences; and diseases resembling cancer (hard nodes in the flesh), indicate this remedy.

CROCUS SATIVUS. (Saffron.)

In respect of the Eyes.—Dilatation of the pupils.

In respect of the Nose.—Violent sneezing. Discharge from the nose of a tenacious thick, dark-black blood (with cold sweat on the forehead).

In respect of the Abdomen.—Distension of the stomach and abdomen. Colic.

In respect of the Genital Organs.—Flow of blood from the womb; dark, stringy, or black, clotted, viscid blood. Flow of blood after miscarriage. Flow of blood from the least movement. Hemorrhage from various parts, the blood being black and viscid. The blood discharged is so viscid that it may be drawn into long strings. Chronic flow of blood, which is dark and clotted.

CUPRUM ACETICUM.

CHARACTERISTIC SYMPTOMS.

In respect of the Stomach and Intestines.—Some animals are affected with violent vomiting; vomiting of glairy matter, water, slimy phlegm, and of blood, attended or followed by convulsions.

In respect of the Appetite.—Excessive and insatiable thirst; eagerly swallowing cold drinks; morbid and unnatural appetite; absence of appetite, followed by the voracious consumption of filth, &c.; sometimes convulsive impediment to the deglutition, especially of liquids; gulping, and difficult, sudden deglutition with a noisy effort.

In respect of the Mouth, Throat, Muzzle, Nose, &c.—The mouth excessively dry; champing of the lower jaw; the throat hot, burning, brilliant red, glossy bright, and inflamed, the glands of the throat and neck swollen; or clammy moisture of the mouth; foam at the mouth; frothy bubbling spume, or white creamy foam; or else the mouth is full of a clear watery fluid; or the tongue is clammy and coated white, or livid and protruding; convulsive movements of the mouth, lips, and adjacent parts; obstruction of the nostrils, or profuse watery discharge from the nose, or very fetid accumulation of thick matter, which is expelled from time to time with force; discharge of a dark color and very offensive.

In respect of the Eyes.—The eyes are brilliant, wild, convulsed, protruding, and restlessly agitated. Eyes apparently *starting from the sockets*,—or equally characteristic is the convulsive closing of the eyes; the eyes are bloodshot, inflamed, and either constantly rolling or fixed and staring; the pupils appear insensible; the sight is evidently dim and uncertain, or there is delirious imaginary sight, the animal recoiling as if from some terrifying object, which, in reality, is not present; the eyes are inflamed, and charged with a thick yellow secretion which gathers over the eye; there is sometimes opacity of the cornea; the conjunctiva injected, often without the bright redness of inflammation, or sometimes exceedingly inflamed and of a vivid red, suffused color; the development of an ulcer in the centre of the cornea.

In respect of the Skin and External Surface.—Increased development of heat; cold sweating, slow fever, general wasting away, and rapid loss of condition; violent shivering, twitching, catching, and convulsive movements in various parts of the body.

In respect of the Pulse.—Imperceptible, soft, small, and sometimes slow; or soft and accelerated, slightly accelerated, and very small.

In respect of the Excrements.—With great increase of heat, constipation; otherwise, violent and incessant purging, which accompanies the vomiting.

In respect of the Movements.—Dull, *sullen quietness*, with apparent insensibility and total unconcern for what is passing; listless drooping prostration, or even torpor, or otherwise violent, unceasing, and furious rushing from place to place; tearing or plunging against any object which is met with; violent convulsive fits, with foaming, gnashing, and distortion of the body; *tendency to fall headlong*, as if from sudden and precipitate giddiness; the muzzle elevated, a movement which is usually accompanied by a peculiar long bellowing or howl, if the howl (as of the dog) it is immediately preceded by a short but perfect bark.

In respect of the Respiratory Organs.—Short, oppressed, accelerated, suffocative respiration; gasping for breath; convulsive effort to stretch the neck as if to remove a tight and choking obstruction; suppressed, stifled, and suffocative cough.

In respect of the Extremities.—Rigidity and sudden contraction of the limbs—convulsive, or spasmodic, rigidity—convulsive writhing or jerking of the limbs.

Has been found useful in fits and epileptic affections.

DIGITALIS PURPUREA.

CHARACTERISTIC SYMPTOMS,

Especially to be Considered in Respect of the Apparatus of Circulation.

In respect of the Pulse.—Sluggish, languid, feeble, and small pulse; very tardy pulsation, which, however, becomes accelerated by sudden exertion; fitful and intermittent pulse; very weak, and almost imperceptible pulse, the pulsation of the heart being excessively difficult to distinguish, and being rather a flutter, thrill, or more or less intense vibration, than a throb or pulsation; very *slow pulse*, with or without other characteristics; slow and small, slow and irregular, or slow and intermittent; very small and feeble pulse; irregular pulse, in which a distinct and stronger throb is occasionally observable; irregularity of pulse, in respect of acceleration as well as of strength, becoming smaller with acceleration, or sometimes slightly more full, or becoming weaker as it is retarded, and at other times thicker, as it becomes less active; palpitation of the heart provoked by lying down.

In respect of the Skin, and External Surface.—Scaling off of the skin, and casting of the coat, over the whole surface of the body; leaden gray, bluish, yellow, or livid hue of the skin, generally, upon examination, and of the bare parts and membranes in particular; general coldness of the body, with or without cold and clammy perspiration; dropsical puffiness of the skin; dropsical swellings generally, or in particular parts; flaccidity of muscular and tendinous parts; flabbiness of the skin; lankness of the body; sunken state of the flanks; hollowness of the loins, and general emaciation; distended bloating of the skin, with tenderness on pressure; the skin retains the impression of pressure; or distension, with insensibility.

In respect of the Movements and Position.—Evident drooping, and uneasiness; languid shifting from side to side, and inclination to lie down, but immediately gasping for breath, and getting up again; incapability of retaining a recumbent position; prostration; lethargic torpidity; disinclination to move, and sluggish movements, &c.

In respect of the Excrements.—Spontaneous and watery evacuations; excrements of an unnatural color; diarrhœic evacuations; relaxed and profuse discharges, in which there is an admixture of blood and phlegm, and in which these matters often predominate.

In respect of the Urine.—Frequent, but scanty, discharge of very hot urine; or total suspension of urination; water evacuated with evident effort, difficulty, and pain; constant, but ineffectual, urging to pass water; dark-colored, red, and bloody urine; discharge of blood only; or profuse or spontaneous discharge, alternately with retention, or scanty emission.

In respect of the Respiratory Organs.—Oppressed and laborious breathing in a recumbent posture; peculiar husky cough.

In respect of the Extremities.—Torpor, stiffness, and excessive coldness of the legs and feet; swellings in the knee and hock-joints; swelling, with peculiar tenderness of the foot, evinced by the cautious manner in which it is grounded; symptoms of this kind in one or more of the feet simultaneously; development of pimples, emitting a whitish-yellow matter, and quickly forming a crust, which, in casting, leaves an ulcer; dry, or purulent ulcers in the feet; fetid and putrid discharge from the ulcers; falling off of the hoofs, or permanent induration and lameness.

In respect of the Appetite.—Diminished, irregular, and sometimes morbid or absent; increased thirst; thirst especially recurring at certain periods; distension of the stomach after eating or drinking; rumination suspended, or slow, indolent, and imperfect.

In respect of the Muzzle, Mouth, Tongue, &c.—Excoriated gums and tongue, with increased secretion of saliva; the mouth sometimes dry; a quantity of white phlegm about the mouth, throat, and tongue; offensive salivation; sometimes, even, putrid smell of the mouth; puffed and livid tongue; the tongue bloated, and of a dead, leaden color; clamminess of the mouth; ulceration of the tongue; the muzzle, and the membranes of the nostrils and mouth, partake of the peculiar morbid hue of the skin, above described (see "Skin," &c.); flaccid and bloated gums; emitting blackish blood when touched.

In respect of the Eyes.—The eyelids adhere with the abundant discharge of thick viscid matter which exudes from them; the inner side of the eyelids is characterized by the peculiar *livid or leaden* hue which is observable in the skin; corrosive discharge of water from the eyes, whenever they are exposed to cold air or undue light, or on first going into *the outer air and light;* vivid redness and inflammation, extending to the conjunctiva; sideway cast of the eyes, occasioned by the protrusion of the membranes from the inner corner over the surface of the eye; enlargement of the vessels about the eye;

or prominent enlargement of a few, or of a portion, of the vessels of the eye, which have a dark and turgid appearance (as in distemper); granulating ulcers on the cornea, sometimes perforating the cornea, and admitting of the exudation of the humor from within; the cornea has a filmy and clouded appearance.

Dropsical conditions; pulse weak, irregular, intermittent; heart and liver diseases often indicate this remedy.

DROSERA ROTUNDIFOLIA.

CHARACTERISTIC SYMPTOMS.

Especially considered in respect of the Respiratory Apparatus.—Cough, accompanied with vomiting of food; cough, attended with the discharge of thick adhesive matter; cough from the interior of the chest; dry cough; spasmodic cough, of which the paroxysms end in violent fits of retching, with or without discharge; cough, particularly provoked or aggravated by lying down; long fits of coughing, which terminate in the suffusion of a livid bluish hue over the membranes of the mouth, nose, and eyes, or, with the distension and vivid redness of the vessels of the eyes; cough, which induces discharges of bright red blood from the nose and mouth; cough, terminating in suffocative paroxysms; fetid odor of the breath attending the cough; extreme hoarseness; difficult and wheezing respiration; impeded breath; cough, with vomiting of bilious matter, sometimes vomiting of blood, and generally with the discharge of a quantity of slimy matter.

In respect of the Pulse.—Accelerated and irregular.

In respect of the Mouth, Throat, Tongue, &c.—Great difficulty and effort in the deglutition of solid substances; swollen puffy state of the throat; swelling of the throat, and back part of the palate proceeding to ulceration; gangrenous ulceration of the palate and tongue; the tongue is covered with slimy white saliva, and protrudes from the mouth; soreness of the throat; constant effort in the throat, as if to expel an accumulation of matter; discharges of blood from the mouth; quinsy, or strangles, of pigs; the glands under the throat intensely swollen.

In respect of the Head and Neck.—Palsied state of the head, and general swelling and enlargement of the neck.

In respect of the Movements and Position.—The animal is feeble and languid in all its movements, owing to the rapid exhaustion and debility which supervene; the animal has a strong disposition to lie down, but is compelled to move, by the evident aggravation of suffering attendant upon a recumbent posture.

In respect of the Nose.—Continual and thin watery discharge, or constant and excessive dryness of the nose; discharges of blood from the nose, either spontaneous, or easily provoked by coughing, &c.; ulceration, and black pores.

In respect of the Appetite.—Increase of thirst, especially in the morning; averseness to solid food, owing, probably, to the pain occasioned by it in the act of deglutition; diminished appetite.

In respect of the Skin and External Surface.—Coldness of the parts about the mouth or nose, frequently of the cheeks; or general trembling and shivering, with heat of the head, or intense coldness of certain parts; sometimes, a peculiar affection of the glands on either side of the neck, consisting of the appearance of elevated tufts of hair, which are of an unnatural color, hard and rough, and around which the parts are peculiarly tender, and red or livid.

In respect of the Excrements.—Evacuations frequent, bloody, or charged with phlegm.

In respect of the Urine.—Dark-colored urine; urine emitting a strong odor; frequent inclination to micturate; scanty drop-discharge.

In respect of the Extremities.—Intense coldness, and the exudation of cold sweat; sudden spontaneous limping, occasioned by a paralytic affection of the legs; great weakness, trembling, wavering and uncertainty of gait.

In respect of the Conditions of Aggravation.—The symptoms have, throughout, a tendency to be aggravated at night, or when the animal lies down.

DULCAMARA.

CHARACTERISTIC SYMPTOMS.

In respect of the Skin, and External Surface.—The development of pustular or vesicular eruptions of various kinds upon the skin; eruption of minute and numerous red, clustered vesicles, or of small clustered vesicles, surrounded by a red surface of the skin; milk crust; eruption of small white vesicles or pustules about the nose, mouth, eyes, and ears (but rarely elsewhere), which suppurate, and then form whitish scabs or crusts (a bluish-white), almost peculiar to sucking calves; eruption of numerous vesicles or granulations of a whitish color, in all parts of the cellular tissue; development of the last-named eruption, particularly on the fleshy parts of the thigh, along the neck, around the jaws, and over the belly, about the shoulders, and even under the tongue; subcutaneous invermination, or the presence of the worm known by the name of *Cysticercus cellulosa*, as evinced by the above-described eruption; thickening of the skin; falling off of the hair; adhesion of the bristles (of the pig); swelling about the roots of the hair; desquamation of the skin in patches; the bristles easily drawn; the drawing of the bristles followed by a slight discharge of blood; eruptions of small, round, reddish vesicles, in clusters, which provoke the animal to rub and scratch itself severely, and which bleed upon being so scratched or rubbed; general red appearance of the skin, occasioned by the presence of these eruptions, and called, by some, by the name of red sweat; humid eruptions, which exude a thin matter upon friction, and which then form into scabs; scaly, vesicular eruptions; dry, scaly excrescences; warts; itching, pustular, suppurative eruptions, concreting into scabs, and particularly developed about the thighs, belly, and quarters; parched, harsh, arid dryness, with heat of the skin; swelling of the glands, with or without induration; sweat of a particularly offensive odor; sweating throughout the body (a symptom which prevails chiefly at night); exudation of offensive sweat, attended with increased and copious emission of urine (also offensive); frequent fits of shivering and shuddering; very sudden puffing and swelling of the body all over.

In respect of the Pulse.—Accelerated, hard, and full, or small and regular.

In respect of the Disposition and Temper.—Apathy, indifferenc abstractedness; the animal being apparently unconcerned for what occu to it.

In respect of the Carcass generally.—Puffiness; general tumefactio dropsical swellings; languor, and excessive lassitude; paralysis of the hi quarters, evinced by the inability of the animal to support itself on the hi legs; general loss of strength, and apparent weariness of the whole bod unpleasant odor emanating from the body; distension after eating; swelli and induration of the glands of the nape of the neck.

In respect of the Movements and Position.—Position prostrate; m tions slow, languid, and, at last, even, partial; drowsy during the day, re less at night; the animal totters in walking.

In respect of the Nose.—Discharge of bright red (arterial) blood fr the nose; discharge of very hot, acrid blood; obstruction of the nose by t swelling of the membranes; inflammatory heat of the nose between the eye stoppage and heat, aggravated by cold air.

In respect of the Mouth, Throat, Tongue, &c.—Pale color of t membranes in the interior of the mouth, sometimes with the presence of bl ish livid spots; copious secretion of saliva; eruption of pimples, and vesicle and even development of ulcers throughout the mouth; clustered vesicles b neath the tongue; puffed, ulcerated, and detached gums; sponginess of t gums; thick coating of more or less viscid phlegm over the tongue; puffines tumefaction, and discoloration of the tongue, or excessive dryness of t tongue; tongue immovable, as if paralyzed; soreness of the throat, with swel ing of the glands of the throat; the roof of the mouth is parched, and i tensely hot.

In respect of the Appetite.—Sometimes undiminished, or morbidl voracious, or there is, apparently, excessive hunger, and eagerness to attac the food, but immediately followed by disinclination to eat; vomiting, princ pally of tenacious phlegm; intense thirst, with increased secretion of tenaciou adhesive saliva, and dryness of the tongue.

In respect of the Excrements.—Diarrhœa, accompanied with *vomiting and more or less thirst;* loose evacuations of mingled dark phlegm and excre ment; very watery diarrhœa, attended with considerable griping, and colick pain, as evinced by the movements of the animal; relaxed evacuations mingle with blood and phlegm; sometimes, also, constipation.

In respect of the Urine.—Urine mingled with tenacious phlegm; turgid whitish, flocculent urine; spontaneous emission of urine; drop discharges suspension of urination; scanty, or very copious and offensive urine; copious urine (at night especially) attending the profuse sweating; dark-colored, or red and heated urine; discharge of phlegm from the passage, with or without, or *before urination.*

In respect of the Extremities.—Intense coldness, with utter prostration, amounting to paralysis; incapability of the legs to bear the weight of the body; vesicular or pustular eruptions, or eruptions of clustered vesicles (see "Skin and External Surface,") about the fleshy parts of the limbs; callous excrescences of various kinds; warts; appearance of clustering vesicles about the knees and other joints; puffiness of the legs; scaling off of the scarf-skin about the lower parts of the legs and the feet.

In respect of the Respiratory Apparatus.—Moist cough; cough which provokes a discharge of blood; catarrhal hoarseness; coughing, which occurs in drawing a deep breath; breathing oppressed and difficult, but sometimes also natural, easy, and unimpeded.

Summary.—Affections resulting from wet weather, or long standing in the rain or water. Catarrh. Common cold. Rheumatic pains, with coldness of the skin. Stiffness about the loins and lumbar region. Dropsical swelling of the legs, or the whole body. Puffy swelling about the fetlock joint. Navicular lameness. Enlarged single glands. Red tettery eruptions. Scabs on the skin. Looseness of the bowels. Diarrhœa from cold and wet. Cough from wet weather—having a rough hoarse sound.

EUPHRASIA OFFICINALIS.

CHARACTERISTIC SYMPTOMS.

In respect of the Eyes.—Swelling, redness, and adhesion of the eyelids; exudation of a thick, yellowish, and sometimes stringy matter, which accumulates along the margins of the eyelids, and especially in the corners of the eye (the inner corner more particularly); excessive heat, redness, and swelling of the whole inner surface and margin of the eyelids; development of ulcers on the margin or inner side of the eyelids; appearance of many minute, bright red pimples around the eyes; abundant exudation of creamy or sometimes bloody matter from the eyelids and eyes; the eyes are partially closed; streaks of red on the white of the eye; discharge of clear but corrosive and scalding fluid from the eyes, aggravated by exposure to the open air or strong light; the eyes are exceedingly tender of the light; the eyelids are compressed and contracted, and the pupils are excessively contracted; the cornea appears clouded; the iris becomes discolored; the transparent humor of the eye is less clear than in health; development of spots, at first gray or bluish (and afterwards white and opaque), more or less opaque, on the surface of the eye; the surface of the eye is suffused, vivid red, with more or less vivid redness of the conjunctiva; the development of an ulcer in the centre of the cornea; cicatrices on the cornea; the conjunctiva is more or less injected.

In respect of the Head and Cerebral System.—The animal is affected with stupor; sometimes it is more or less wild; it is evidently delirious, the habits being totally changed, and there being a rambling, incoherent manner; the animal does unnatural and senseless things; if loose, the animal has a disposition to wander without purpose, and will even lose itself, or appear lost, in its usual haunts; the animal looks vacantly and stupidly at everything, and does not seem to recognize its usual attendants; great uneasiness during the day.

In respect of the Nose.—Violent and rattling snorting, to expel the accumulation of thick, adhesive matter or phlegm, which collects in the nostrils; the development of pimples (just within the nostrils on either side), which emit a thick, yellowish, or dark brownish matter; the nostrils are very sore and excoriated, and the animal starts back when they are touched ; excess discharge from the nose, sometimes very thin and watery, and at others th and viscid ; discharges of blood from the nose, particularly provoked by snorting, and other efforts made by the animal to expel the accumulation phlegm and matter ; profuse and spontaneous discharges of blood.

In respect of the Mouth and Throat.—Accumulation of more or thick and tenacious phlegm in the mouth and throat, which is expelled w an effort, and with which the muzzle is often observed to be smeared ; frequ and gaping yawns ; discharges of blood from the gums.

In respect of the Excrements.—Constipation, often preceded by sev diarrhœa ; sometimes natural.

In respect of the Urine.—Increased and frequent discharge ; someti natural.

In respect of the Appetite.—The animal refuses food, and suffers f insatiable thirst, and drinks frequently and copiously ; sometimes the appe is natural in every respect.

In respect of the Movements.—Imbecile ; idle ; purposeless ; or in lence and reluctance to move ; sometimes, also, the movements are in m respects natural.

In respect of the Extremities.—Torpor, and apparent absence or di nution of sensation ; or, again, sudden and unaccountable swelling ; so times, also, the extremities are in every respect in the ordinary condition health.

Principally used for diseases of the eyes, catarrhal affections, and influen involving eyes, nose, and even the bronchia, and causing cough.

FERRUM MURIATICUM.

CHARACTERISTIC SYMPTOMS.

Lameness of the shoulder ; spitting up blood ; hemorrhage from the lung cramps in the legs ; bright red crystals in the urine ; general lameness in th joints ; excessive languor ; painful lameness in the thigh ; cough, with blood expectoration ; miscarriage ; diarrhœa.

Many of these symptoms are found under other preparations of iron ; bu this, which is sometimes called the chlorinated or muriated tincture of iron, i believed to be able to do all the good that can be obtained from iron in an form.

GELSEMINUM.

CHARACTERISTIC SYMPTOMS.

In respect of the Skin and External Surface.—Eruption like measles.

In respect of the Pulse.—Frequent, soft, weak, intermittent ; in men and animals Gelseminum often increases the rate and frequency of the pulse ; sometimes even the volume of the pulse seems increased ; but generally it is diminished. Pulse fluttering. These various symptoms of the pulse seem to indicate that this remedy may be useful in dilatation of the heart, especially in rheumatic patients.

In respect of Appetite.—Alternate increase and loss of appetite.

In respect of Excrements.—Bowels loose, but great difficulty to discharge anything; slow stool.

In respect of Urine.—Urine much increased in quantity. May prove useful in spasms of the ureters from the passage of calculi.

In respect of the Movements.—Causes prostration and exhaustion of the nerves of voluntary and involuntary motion; causes paralysis.

In respect of the Eyes.—Heaviness of the lids; difficulty of opening the eyes; dryness of the eyes; dilatation of the pupils; amaurosis; dimness of sight; blindness; total blindness, with dizziness.

In respect of the Nose.—Watery discharge from the nose; sneezing; bloody, mucous discharge from the nose; bleeding from the nose. In men Gelseminum is considered a specific for colds in the head (catarrh), accompanied by a discharge of watery fluid from the nose, hoarseness, cough, soreness in the throat and chest.

In respect of the Jaws.—Stiffness of the jaws; difficulty of opening the mouth.

In respect of the Mouth, Tongue, and Throat.—Dryness of the mouth; dryness in the fauces; tongue thickly coated, red, raw, and painful; dryness, irritation, and soreness of the throat (paralytic); difficulty of swallowing.

In respect of the Limbs.—Weakness and (paralytic) loss of motion in the limbs; rheumatism in the legs; with weakness in the knees.

Gelseminum bears some resemblance to Rhus tox. It may be very usefully given in rheumatism, especially of the legs, with some swelling, but much greater painfulness; pains worse at night; and the swelling changing from one part or joint to another every day or two.

GLONOINE.

CHARACTERISTIC SYMPTOMS.

This powerful remedy is suited to the most violent attacks of pain in the head, and congestion to the head, even that caused by the sun's intense heat. But the difficulty is, in the absence of the subjective symptoms afforded by human sufferers, to determine its indications in the corresponding affections of domestic animals. But the principal circumstance which produces in these animals such a congestion as Glonoine cures, that is, exposure to the heat of the sun (sunstroke), may usually be relied on to suggest this remedy, then a comparison of the attendant symptoms may determine its choice.

In respect of the Head.—Throbbing and fulness in the top of the head. Throbbing in the sides of the head and temples, and rush of blood there. Throbbing in the forehead and rush of blood in arteries of the neck. Fulness and violent throbbing at the back of the head.

In respect of the Eyes.—Pupils dilated.

In respect of the Face.—Stiffness of both jaws. Gaping and dro ness.

In respect of the Neck and Back.—Stiffness in the nape of the n Gaping and disposition to stretch backwards.

In respect of the Extremities.—Stiffness, or trembling of the limb

In respect of the Pulse.—Accelerated, irregular, intermitting pu Full and hard, throbbing pulse.

In respect of the Skin.—Profuse perspiration.

In respect of the Sleep.—Drowsiness. Great inclination to sleep.

GRAPHITES.

CHARACTERISTIC SYMPTOMS.

In respect of the Skin and External Surface.—Development o vesicular, scaly eruption, accompanied with the most intense and contin irritation, as evinced by the continual effort made by the animal to scrat rub, or bite itself; eruption, of the character of mange, or degenerating i mange. The skin flabby and flaccid, emitting a peculiar crackling sound u pressure; the wool easily torn off; appearance of blackish or brownish sp or patches upon the skin, which are so communicated to the hair or fleece, to discolor that also; unhealthy and livid hue; disposition to ulcerate or fester after the slightest injury; malignant and ulcerative vesicles in vari parts—humid oozing, and finally scabby and scaly eruptions; sores engend ing proud flesh, and discharging an offensive matter; disposition to excori tion; red spots or patches upon the skin; *a peculiar parched and harsh d ness of the skin*, unmodified by any transpiration of moisture; general increa of heat, and prevalence of irritation.

In respect of the Pulse.—Hard and accelerated.

In respect of the Appetite.—Sometimes a craving inordinate deg of hunger at first, attended, however, with repugnance to almost every ki of food, and followed by total loss of appetite, and the predominance of inten thirst, more especially in the morning, and after eating. Distension a bloatedness of the body after eating; tightness and inflation of the belly, a companied with heavy and insuperable drowsiness after eating.

In respect of Rumination.—Suspended.

In respect of the Excrements.—Whitish, hard, lumpy, knotty, a very offensive evacuations; very hard evacuations, with obstinate costivenes and characterized by hardness and distension in the region of the liver; lar lumpy evacuations; the costiveness is generally followed by still more intra table diarrhœa, with soft pappy evacuations; *the appearance of worms of v rious descriptions in the dung;* the development of brownish, reddish, or blac ish excrescences of the nature of hæmorrhoids under the tail.

In respect of the Urine.—Scanty, dark-colored urine, depositing whitish or brick-colored sediment; urine of a peculiar acerbity of smell; spo taneous urination; drop discharges. Severe urging, and evident pain a difficulty in urination.

In respect of the Stomach and Intestines.—Apparent tightness a fulness, with hardness of the belly; hardness, with enlargement of the belly; exceeding tenderness of the region of the liver to the touch, the animal winces and shrinks away when pressed in the lower part of the flank; very offensive flatulency; the stomach is evidently distended with wind. In some animals we may notice continued and violent vomiting, as attendant upon these symptoms.

In respect of the Movements.—Dull, listless, and inanimate—the animal can hardly be compelled to stir. It stands motionless, with the head drooping, with a gloomy, distressed appearance; or it separates from its companions, and continues to wander slowly by itself.

In respect of the Disposition.—Dull and inanimate, listless, dispirited.

In respect of the Eyes.—The eyes dull, the vessels of the eyes characterized by the presence of a yellowish-brown fluid—or, subsequently, the vessels assume a brighter red, and inflammatory hue. The eyes are half closed; the conjunctiva is more or less injected, the cornea being dull, semi-opaque, and suffused with a faint yellow hue; the upper lids of the eye droop, and the animal appears incapable of raising them; the eyelids are swollen, and exude a copious discharge of thickish matter; dry matter gathers in crusts about the lids and lashes; there is more or less profuse lachrymation,—the eyes are inflamed, and of a suffused vivid red color, somewhat modified by the yellowish tinge into a turgid brown-red, and excessively tender of the daylight.

In respect of the Ears.—Accumulation of offensive matter in the ears; or peculiar parched dryness of the cavity of the ear, and want of the habitual quantity of ear-wax. The animal is almost insensible to sound when motionless, but appears to quicken in hearing with motion. Scaly, scabby, vesicular and pustular eruptions, or excoriation round the roots of the ears, and behind them.

In respect of the Nose.—The internal membrane of the nose becomes pale, discolored, and even livid; there is ulceration of the interior of the nostrils; the nostrils are fissured or sore; the cavity of the nose is sometimes intensely dry and parched, and the sinews are totally obstructed, or there is thick, tenacious, yellow-brown, blackish, or watery discharge from the nose, all offensive, but especially the former kinds, which degenerate into putridity as the color becomes darker. Discharge of offensive matter from the nose,—*dry, chippy incrustations in the nostrils;* excessively offensive smell from the nose conveyed by the breath; black pores; bleeding at the nose, chiefly observable towards night, and especially when the fever symptoms have run high; the scent is sometimes (though rarely) morbidly quickened for a brief interval.

In respect of the Muzzle, Mouth, Tongue, Gums, Throat, &c.—Accumulation of phlegm in the mouth, which adheres to the palate; the mouth is parched and dry, or there is excessive secretion of saliva; the membranes of the mouth and gums are pale, ash-colored, and degenerate into a purplish and livid hue; the mouth and gums emit a very offensive smell, verging upon putridity; the tongue, first pale and ash-colored, becomes purplish or livid; vesicles and even ulcers are developed on the tongue; the throat is sore and discolored—it is also puffed and swollen, and there is evident difficulty of deglutition. The *muzzle is stained brownish, or blackish.*

In respect of the Carcass Generally.—Total loss of strength and condition ; prostration, and incapacity of action, as from general paralys utter emaciation, and the animal wastes away to a mere skeleton.

In respect of the Extremities.—Callous excrescences, arid dryne and fissures, swelling, rigidity and distortion of the limbs ; inflexibility of swollen joints ; vesicular eruptions on the inner side of the joints and betw parts which are adjacent, and liable to come into contact ; gnawing ulcerat vesicles ; excoriation ; rigidity and torpor ; burning heat of the feet, or m frequently continual coldness of the feet ; swelling and distortion of joints and structural parts about the feet ; gnawing ulcerative vesicles a parched deadened scaliness about the feet ; flatness of the heel ; absence elasticity in the hoof. Enlargement of the frog ; swelling and protrusion, descent of the sole to the level of the crust.

HAMAMELIS.

CHARACTERISTIC SYMPTOMS.

Venous or *passive hemorrhages*, from the lungs, and nose, and uterus. Ep taxis purpura. Bleeding piles. Dysentery, with stools largely loaded wi blood. Burning, scanty, high-colored, *bloody urine.* Slight hacking coug spitting of blood from the lungs ; vomiting of blood from the stomach, whi is thick and dark. Much used in the shape of "Pond's Extract," as an exte nal application for pains, rheumatism, &c., &c.

HELLEBORUS NIGER (*Christmas Rose*).

CHARACTERISTIC SYMPTOMS.

Rigidity of the limbs. Violent shaking of the head. Falling off of th hair and nails. Head burning hot. Swelling of the face and tongue. Blis ters on the tongue and in the mouth. Dropsical swelling of the belly. Du ness ; drowsy, stupid state. General dropsy in alternation with Arsenicum Dilatation of the pupils. Pale, œdematous swelling of the face. Insensibl rigidity of the tongue. Frequent desire to urinate ; but passing only a smal quantity.

Stiffness of the cervical muscles ; stiffness of the neck. Palpitation of th heart.

Sudden watery swelling of the skin of the whole body. Spasmodic rigidit of the limbs.

HEPAR SULPHURIS CALCAREUM.

CHARACTERISTIC SYMPTOMS.

In respect of the Pulse.—Accelerated, small, and barely perceptible.

In respect of the Respiratory Apparatus.—Deep, dull, and insonor ous cough ; the lowing, barking, and other sounds emitted by animals being feeble, insonorous, and as it were muffled or stifled ; coughing, followed by sneezing; suffocative cough, which ends in fits of retching, but without discharge, or with the expulsion of phlegm (sometimes copiously), or of blood, more or less pure, vivid, and red, or simply tinging, or appearing in thready streaks amongst the phlegm. Occasionally cough, which provokes watering of the eyes; a peculiar internal, muffled, apparently painful, hoarse, rattling, feeble, and gurgling cough; short, accelerated, hurried, uneasy respiration; wheezing inspiration with double and grunting respiration. Respiration, as it were, puffing, and effected with an effort; panting respiration; difficulty of breathing, apparently aggravated by lying down.

In respect of the Skin and External Surface.—The development of sluggish pimples upon the chest; excessive tenderness of the chest to the touch, the animal shrinking when touched or pressed in that part, as if goaded or stung; eruption of festering tubercular pimples, which are excessively tender of the touch; unhealthy festering skin, difficult of healing, and affected with passive and sluggish ulceration; ulcers, of a putrid or cancerous description, emitting a rotten, rancid odor. Upon close observation, a yellowish tinge will be observable in the skin, the animal is frequently provoked to scratch and rub itself by a heat and irritation of the skin, and the friction will be observed to develop some white vesicles on the surface; swellings, indurations, and nodosities in the glands of the neck and between the fore legs. Adhesive, sour sweat, heat and sweating about the chest and ears, or sometimes even about the eyes; parching heat (generally at night), or sometimes transient flushes of heat, terminating in sweating. Day-sweats, provoked by the least exertion; clammy, cold sweat about the head; staring coat; the coat loses all gloss and becomes dull and sombre; falling off of the hair; gradual attenuation of the whole frame; fever symptoms returning periodically towards evening.

In respect of the Appetite.—At first no apparent alteration, then morbid increase of appetite, voracity, and hankering after succulent and unwholesome food; the food so taken often passing totally undigested; eating, followed by considerable thirst, with the development of the febrile symptoms, and the unmodified progress of the attenuation. The morbid appetite gradually disappears, and there is total absence of appetite, accompanied by constant and excessive thirst.

In respect of the Excrements.—Dry, hard, and whitish evacuations, which are followed, however, by continued and obstinate relaxation; relaxed evacuations of excrements, mingled with blood, phlegm, and matter, and in which the latter often predominate; soft but scanty and evidently painful evacuations, with much urging, and subsequent discharge of thin, serous, and very offensive matter, often followed with sweating between the hind legs; sour-smelling, whitish, stringy, or loose evacuations.

In respect of Urine.—Dark-colored and hot, sometimes bloody, increased emission at night; copious emission of pale, watery urine; scalding, acrid urine; discharge of blood occasionally occurring after micturition; red and inflamed circumference of the outer extremity of the passage.

In respect of the Organs of Generation.—Organic debility, with increased sensibility and excitability of the functions; constant desire, especially in the female; constant heat, without energy; soreness beneath the parts; swelling and excoriation of the bearing in the female; cancerous ulceration of the glands connected with the genital organs, or sympathe ulceration of other glands, especially of those appertaining to the lacteal paratus.

In respect of the Milk.—Gradual diminution, and readily spoiled standing; sour.

In respect of the Muzzle, Mouth, Tongue, Throat, Nose, &c. Yellow hue of the skin surrounding these parts; yellowish or brownish tin of the membranes of the mouth and nose generally; abundance of watery flu in the mouth; increased secretion of saliva; swelling of the tonsils; dr parched condition of the throat; soreness and tumefaction of the throat; ulce of a creamy appearance, in the mouth; unhealthy color of the tongue; tong ashy, loaded with a creamy fur, &c.; the gums are tender to the touch, evinced by the wincing and shrinking of the animal upon pressure; the gun swollen and inflamed, but generally of a purplish-red hue, or tinged wi yellow; redness, swelling, soreness, tenderness, and inflammation of the nos *discharge from one nostril;* tenderness, and ulceration with incrustations the nostrils; the scent either totally deficient, or temporarily and morbid quickened.

In respect of the Ears.—Hearing dull and obtuse; accumulation more or less fetid matter in the ears; incrustated eruptions around and b hind the ears; irritation of the ears, attended with heat and redness.

In respect of the Eyes.—The eyes obscured, dim, and filmy; sunk within the orbits, the ball of the eye at the same time protruding prominent from the lids; clenching of the eyelids; inflammatory heat and redness of tl eyelids and eyes; tenderness of light; spots more or less white and opaqu upon the cornea; ulceration of the cornea; watering of the eyes, and adhesic of the lids at night.

In respect of the Extremities.—Cracks and fissures about the legs ar feet, especially the latter; and swelling of all the joints, more or less, singl or simultaneously.

In respect of the Conditions Attendant upon the Sympton Enumerated.—Parturition appears to modify all the symptoms, or even suspend them for a time.

Summary.—Suppurative condition of the glands. Strangles. Cracke chapped, ulcerated condition of the skin. Grease. Putrid-smelling ulce and wounds. Small lumps or tuberosities under the skin. Swelling of tl glands in the neck. Unhealthy condition of the skin; every slight injury b comes raw, and is disposed to ulcerate, instead of healing quickly.

HYOSCYAMUS NIGER.

CHARACTERISTIC SYMPTOMS.

In respect of the Pulse.—Accelerated, heavy, and full; bounding oppressed.

In respect of the Head.—The head and neck stretched out horizontall furious shaking of the head; swinging the head first on one side then on tl other; evident giddiness, evinced by the animal wheeling or whirling roun tottering, wavering, and eventually falling; the animal turns to the left, sinks and crouches, and gnashes at or tears the ground; the animal falls headforemost; eager plunging of the muzzle into water, if at hand; delirium, more or less violent.

In respect of the Eyes.—Convulsive distortion, oblique and inapposite glance, or squinting, peculiar to the rabid disease of animals; the eyes are dazzling, sparkling, brilliant, and protruding; spasmodic closing of the eyelids; the eyes are fiery, staring, fixed or wandering, and convulsed; the pupils are inordinately dilated; the sclerotica is suffused with fiery redness; the eyelids are swollen; there is evidently a second sight, or imaginary sight engendered by delirium; excessive susceptibility and excitability, provoked or aggravated by the sight of red objects (respecting cattle); these symptoms are generally preceded by dulness and insensibility of the eyes and of sight.

In respect of the Movements.—Impetuous, headlong, furious; wildly rushing hither and thither, plunging precipitately at every object which occurs in the way of the animal; staggering career, tail arched, tearing up the ground, or the animal is unable to raise itself from its haunches, owing to the paralytic affection of the hind legs and quarters; it makes ineffectual attempts to get up, and bears an anxious, deplorable expression; these symptoms are generally preceded by a comatose, drowsy, inanimate, and completely lethargic condition.

In respect of the Disposition.—Wild and incoherent, without method or purpose; or, on the other hand (as in rabid disease), methodical malignity; overweening disposition to do mischief; disposition to *bite*, lacerate, or destroy everything which is in the way; these symptoms are usually preceded by a gloomy, sullen, or deplorable quietude and taciturnity, during which the animal appears totally unconscious of sounds or objects to which it has been accustomed.

In respect of the Stomach, and Apparatus of Digestion.—Tightness, distension, and tenderness of the belly; vomiting of watery fluid, attendant upon giddiness; vomiting of phlegm mingled with blood; vomiting of blood, of food, or even of filth and excrements; after vomiting once or twice, there is sometimes total corruption of the appetite, and the animal, in such cases, never recurs to its natural food, but falls eagerly upon its own excrements, or other foul and disgusting offal.

In respect of the Appetite.—Violent and *insatiable* thirst; repugnance and complete aversion to the natural food; the animal avoids its proper food, when offered, with apparent horror; or, at other times, attacks it eagerly, but without swallowing, or even retaining it in the mouth, dropping it as soon as it is seized; inordinate, morbid, and depraved hunger; the animal falls foul of the most putrid filth, which it gulps with eagerness; or, at other times, it gathers up minute threads, straws, and such other peculiar articles; the animal consumes its own ordure; it hunts up every possible corner in which urination might have taken place, and licks each of them very assiduously; insatiable, burning thirst, fearfully intense; for some time the animal will continue to seek for water, and will lap it up with eagerness and very hurriedly, but when (as is the case) the paralysis of the jaws and tongue, so peculiarly characteristic, ensues, the animal will be observed to plunge its muzzle deep into water, as soon as within reach.

In respect of the Excrements.—At the outset constipation, characterized by evident and constant desire to evacuate, with small, insufficient, and rare evacuations; symptoms which are succeeded by spontaneous discharg of loose, unrestrained evacuations, often containing peculiar substances no ordinarily found in the contents of the stomach, or in the evacuations watery diarrhœa; diarrhœa evidently unattended with any pain, or even with consciousness of the discharge.

In respect of the Urine.—Spasmodic retention of urine or retention occasioned by spasm of the bladder; total absence of discharge; spontaneous discharge of urine, occasioned by paralysis of the bladder; scanty emission, with constant urging, or copious emission of clear, pale urine.

In respect of the Organs of Generation.—Great increase, and insatiate permanency of heat; swelling and redness of the bearing, or the same symptoms sometimes followed by utter prostration and paralytic incapacity of the functions.

In respect of the Muzzle, Mouth, Throat, Tongue, Nose, &c.—Intense dryness and heat of the mouth succeeded by copious secretion of viscid saliva, or of saliva tinged with blood; the tongue totally paralyzed, dry and parched; tongue vividly red, but soon degenerating into a purplish violet, or livid hue; dryness of the tongue, accompanied with a fur of a dusky-brownish hue upon it; offensive smell issuing from the mouth; spume exuding from the corners of the mouth, or mouth filled with white foam; drivelling of foam, with giddiness and precipitate falling; swelling, redness, and afterwards purplish color of the gums; the teeth are covered with adhesive phlegm; teeth convulsively clenched; throat dry, red, and hot; tonsils and glands generally swollen; fauces paralyzed; incapacity of deglutition; the nose and muzzle burning hot, and dry; discharges of blood from the nose.

In respect of the Ears.—Intense heat, with redness and dryness of the internal cavity; obtuse and almost insensible hearing.

In respect of the Skin and External Surface.—Burning heat, and dryness at the roots of the horns, and of the head generally; equal or little less heat and dryness throughout the surface of the body; trembling and shocks of various parts of the body; local or general paralysis; *universal shuddering;* development of brown spots, or of large pustules on the surface generally; dryness and roughness of the skin; jerking, twitching, and convulsive movements throughout the body; twitchings, like rapidly-succeeding pulsations on the surface; vibrating depression, or drooping of the head and neck; convulsive movements of the eyelids; coldness of all parts of the body except the head; gangrenous, malignant-looking spots or festers; excessive susceptibility and tenderness of the ridge of the back or course of the spine, to the touch.

In respect of the Extremities.—The four legs are gathered together, and the back arched; shuddering of the limbs, coldness of the limbs; shocks and convulsive jerking and twitching of the limbs; sudden paralytic affections of the limbs,—the hind legs especially —pawing and tearing the ground.

In respect of the Respiratory Organs.—Short, and greatly accelerated respiration; panting gasping breath; cough, in quickly successive fits, whether in rest or motion.

Summary.—Convulsions. Coldness of the body, with heat in the head. Shrieking; mad, furious rage; plunging; beating the head against the manger; then falling down unconscious. Wild delirium; foaming at the mouth. Eyes red, inflamed, fixed—protruding from the sockets; pur wild, rapid movement of the eyes. Violent shaking of the head. Difficulty of swallowing, from spasm and constriction of the muscles of the throat. Swelling in the throat. Jerking in the tendons; twitching of the limbs. Trembling of the body. The dung and urine may pass without the power for expulsion; the sphincters of the bladder and anus being paralyzed. Retention of urine, from spasm.

HYPERICUM.

CHARACTERISTIC SYMPTOMS.

Especially useful in all cases of wounds in which the substance of the nerves is injured; as in wounds of the extremities which threaten lockjaw from that reason. As valuable in injuries of the nerves as Arnica is in those of the flesh or muscles. Weakness and trembling; constant drowsiness; tearing pains in different parts; vertigo; delirium; colic; erysipelas of the face; dilatation of the pupils; bloatedness of the neck and of the abdomen; thirst; tenesmus; difficulty of breathing; palpitation of the heart.

IGNATIA AMARA.

CHARACTERISTIC SYMPTOMS.

In respect of the Disposition.—Pining of the young when separated from the dam, and of the dam on separation from her young; desolation; uneasy restlessness, with grief; great agitation of this nature in the morning, on first moving; grief, expressed by a peculiar neighing, lowing, bleating, or whining; dislike of companionship; sullenness; disposition to remain apart; dread of mankind, even of the constant attendants, and also of other animals of the same species; predisposition to take alarm.

In respect of the Appetite.—Irregular and fitful appetite; appetite easily satiated; want of appetite, and even averseness to both food and drink; inclination to eat succulent and unwholesome food; or a positive repugnance to green and succulent food; eating produces distension, hardness, and tightness of the belly; the distension of the belly painful upon pressure.

In respect of the Digestive Functions, and Stomach generally.—The region of the spleen, on the left side, is very tender and susceptible to the touch; flatulence, accompanied with colicky pains, as evinced by the movements of the animal, more especially at night; pulsation in the belly; rumbling and bubbling of wind in the intestines; retching and vomiting of food, or of bilious matter and tenacious phlegm; vomiting of watery fluid; thirst, either accompanying the vomiting or without the latter symptom, and mostly accompanying the febrile manifestations.

In respect of Rumination.—Indolent, irregular, and imperfect.

In respect of the Excrements.—Very large, lumpy, whitish, or yellowish evacuations, which are ejected slowly, and with much straining and effort; protrusion of the intestine during evacuation; the presence of threadworms in the lower intestine (which are, however, rarely ejected in the evacuations); contraction of the alvine orifice; continued and painful irritation and itching of the parts, as evinced by the lashing and clenching of the tail, and by the ...ual inclination of the animal to rub the parts; hard, knotty evacuations, ejected only after repeated and fruitless efforts, or subsequently slimy, blood-stained, and relaxed evacuations, accompanied with noisy gurgling in the intestines, and with evident colicky pains, evinced by the disposition of the animal to roll itself, to strike at the belly with the feet, and to huddle the limbs up close to the belly, &c., &c.

In respect of the Organs of Generation.—Sweating, below the bearing and between the thighs; imperfect heat; transient swelling of the bearing, without continued or fructifying heat.

In respect of the Skin, and External Surface.—Sweating whilst eating; general heat, particularly of the head, with coldness of the extremities; fits of shivering, allayed by covering, or other external warming appliance; fitful and sudden flushing of heat; excoriation of the skin, especially in parts which are liable to come into contact; irritation and itching of the skin, provoked or aggravated by the warmth induced by exercise in the open air; general itching and irritation of the skin, readily mitigated by friction; eruption, of the character of nettle-rash; falling off of the hair.

In respect of the Head.—Reeling, from giddiness; tossing the head backwards.

In respect of the Eyes.—Inflammatory redness; swelling of the vessels of the eyes, and of the upper lid; pupils dilated and fixed; convulsive rolling of the eyes; exceeding tenderness of light; watery discharge from the eyes, provoked by exposure to strong light; adhesion of the eyelids.

In respect of the Ears.—Dulness of hearing, and swelling of the adjacent glands.

In respect of the Muzzle, Mouth, Throat, Nose, &c.—Incrustations and fissures on the muzzle and lips; the lips are dry, fissured, and either bleed spontaneously, or are easily provoked to bleed; *convulsive twitchings of the muscles about the cheeks;* similar jerking and twitching of the corners of the mouth; constant yawning; tetanic clenching of the jaws; the tonsils are swollen, inflamed, and indurated; ulcers are developed about the tonsils; the throat is sore, red, and inflamed, the palate the same; difficulty of swallowing fluids, occasioned by spasmodic closing of the throat; more or less foaming at the mouth; the tongue is enlarged, so as to be exposed to be bitten; the tongue is moist and coated; white accumulation of phlegm in the mouth; sour smell from the mouth; the nose is dry and swollen; the nostrils are sore and ulcerated; discharges of blood from the nose.

In respect of the Movements.—Gloomy tranquillity, and repugnance to motion; convulsive, spasmodic, and spontaneous movements; epileptic and other convulsions; sudden rigidity of the whole body, or of particular parts; very heavy or very light sleep; startled at the slightest noise or motion.

In respect of the Extremities.—Convulsive jerking; tension, rigidity, or torpor; excessive tenderness of the soles of the feet, the animal carefully picking its way, and grounding the feet very cautiously.

In respect of the Respiratory Apparatus.—Hoarse, dry cough; short, sudden, and fitful cough; continual cough, day and night; spasmodic, exhausting cough; cough, recurring at night; cough, attended with watery discharge from the nose; difficulty, shortness, and oppression of breath, with or without palpitation of the heart; constant, deep inspirations, and sudden or interrupted respirations.

IPECACUANHA.

CHARACTERISTIC SYMPTOMS.

In respect of the Skin and External Surface.—Coldness of the extremities, with profuse perspiration of the cold parts; rigor and shivering, accompanied with coldness of the limbs, muzzle, &c.; considerable heat, with little shivering, or considerable shivering, with little increase of heat (the chills, and shivering fits are attended with thirst); the febrile symptoms are accompanied with vomiting (the tongue being sometimes clean, sometimes foul); the shivering fits are provoked or aggravated by covering, or by other appliances of external warmth; sudden accession of heat within doors, attended with perspiration and reeling; coldness of the ears, shivering of the ears; fits of stretching, uneasiness, and languor, sometimes with sweat about the head, before the shivering fits are developed; eruptions of small vesicles or pustules upon the fleshy parts of the legs; pallid hue of the membranes about the mouth, &c.

In respect of the Pulse.—Irregular, intermittent, or soft.

In respect of the Movements.—Wavering, reeling, and tottering gait, with or without falling (giddiness).

In respect of the Digestive Organs Generally.—Retching, provoked by cold drinks; puffiness in the region of the stomach; vomiting, provoked by inflexions of the body, or by lowering the head; profuse secretion of thin, clear, watery fluid in the mouth; vomits, consisting either of undigested food or pure water, or of slimy, yellowish, greenish matter; vomits, having a peculiarly sour smell; vomiting, accompanied with thirst, or with foul smell emanating from the mouth; vomiting simultaneously, with loose diarrhœic evacuations; vomits, consisting of bright red (arterial) blood, or of dark substances or black matter; colicky and griping pain indicated by the movements.

In respect of the Milk.—Mingled with blood, or tinged with blood, without the presence of any symptoms of local inflammation.

In respect of the Excrements.—Sometimes black evacuations; diarrhœa, mingled with blood and phlegm, and of a whitish flocculent appearance; diarrhœa, the evacuations being mingled with blood and phlegm; relaxed evacuations, simultaneously with vomiting; evacuations of a slimy and bloody nature, followed by convulsive urging; yellowish or greenish evacuations, very loose, and emitting a putrescent odor; loose, frothy, purulent evacuations; loose evacuations, having an appearance of fermentation.

In respect of Urine.—Urine scanty and red, or bloody, or which deposits a thick reddish-brown sediment; discharge of matter from the passage.

In respect of the Appetite.—Excessive disgust of food.

In respect of the Muzzle, Mouth, Tongue, Throat, Nose, &c.—The muzzle, nose, and adjacent parts, are very cold; difficulty of swallowing; swallowing performed with an effort or gulp; tenderness of the mouth; profuse accumulation of thin watery fluid in the mouth; yellowish or whitish coating of the tongue; the skin about the mouth is red; convulsive jerking of the lips; small vesicular elevations over the inner surface of the lips; discharges of blood, chiefly bright-red blood, from the nose.

In respect of the Organs of Generation.—Discharges of bright-red arterial blood, or of dark clots.

In respect of the Respiratory Apparatus.—Cough, attended with discharges of blood from the mouth and nose, and sometimes, also slightly, from the eyes; cough, attended or followed by retching and vomiting; dry spasmodic cough.

In respect of the Extremities.—The limbs are rigid, or convulsively agitated.

Summary.—Diarrhœa. Dysentery. Vomiting. Asthma of dogs. Loose, fermented, frothy evacuations. Excrement mixed with mucus and blood. Evacuations black, resembling pitch. Discharge of blood from the nose and mouth. Swelling in the region of the stomach. Total loss of appetite. Vomiting of food in dogs, which appears to be only half digested. Panting; difficult respiration; threatened suffocation. Suffocative cough—dry. Irritation in the bronchia. Convulsive startings in the limbs. Stiffness and arched condition of the back.

KALI BICHROMICUM.

CHARACTERISTIC SYMPTOMS.

In respect of the Head.—Heaviness, and throbbings in the head. Vertigo every two hours, lasting for twelve hours, with extreme prostration of strength.

In respect of the Eyes.—Redness and inflammation of eyes; heaviness and soreness of the eyes. The eyes are inflamed, with yellow discharge. Eyelids inflamed and much swollen. *Yellow color of the whites of the eyes*, as in jaundice.

In respect of the Nose.—Watery discharge, with soreness of the nose. Much thick clear mucus from the nose. Sneezing; soreness, and swelling of the nose. Stuffing up of the nose; masses of thick dark phlegm (like scabs) are discharged from the nose. Soreness and ulceration of the interior of the nose; especially of the partition between the nostrils (septum narium). Bleeding frequent from the nose; offensive smell from the nose. Loss of smell. Fetid discharge from the nose. *Caries* of the bones of the nose.

In respect of the Mouth, Tongue, and Throat.—Ulceration of the lips. Dryness of the mouth and throat. Tongue dry; ulcer on it; tongue smooth, red, or cracked. Redness, swelling, inflammation, or ulceration in throat. Formation of a tenacious, yellowish, false membrane in the throat. (*Diphtheria* and *croup*, in the human subject.)

In respect of the Appetite and Stomach.—Loss of appetite. Nausea, vomiting. Ulcer in the stomach, with vomiting of mucus and blood.

In respect of the Stool and Urine.—Constipation; bloody stools, or mucus and blood; urine yellow; scanty; high-colored; red. Complete suppression of urine, with small pulse and excessive prostration of strength.

In respect to Genitals.—Yellow, ropy leucorrhœa, that can be drawn out into strings.

In respect of the Respiratory Organs.—False membranous formations in the nose, fauces, larynx, trachea, and bronchial tubes. Cough with expectoration of tough stringy mucus, similar to that from the nose. Chronic, hoarse cough; worse in the morning. Great difficulty of breathing.

In respect of the Back, Neck, and Limbs.—Chronic rheumatism; stiffness in the back, and nape of the neck; stiffness in the shoulder-joint; rheumatic pains in the limbs, worse at night.

In respect of the Skin.—Eruption like measles. Large, painful ulcers, with dark centre, and overhanging edges. Sloughing sores. Ulcers with inflamed, bright red border, hardened base, movable on the subjacent tissues and with a blackish spot in the centre. Abrasions readily ulcerate.

General Symptoms.—Excessive weakness; small pulse; debility; emaciation; *stiffness all over;* rheumatic pains and stiffness in all the joints. Pains which change about, from one part to another. Symptoms worse or are produced in hot weather; worse in the morning. Nasal gleet; with fluent, acrid discharge (coryza), which excoriates the parts over which it flows. Chronic catarrh; especially when rheumatic affections are also present. Cough with rattling sound, as if of loose but tough mucus in the chest. Rheumatic affections, which change from one part to another; are worse in the morning, from cold, and even in summer. (Rheumatism worse in winter requires rather Rhus tox.) Ulceration of the throat and glottis. Stringy saliva. Loss of appetite. Colic at night, abdomen sensitive to pressure. Constipation; stools scanty, knotty, dry. Urine dark, watery, strong smelling.

KALI CARBONICUM.

CHARACTERISTIC SYMPTOMS.

In respect of the Skin and External Surface.—Yellowish or reddish spots or patches upon the skin, provoked to emit a sanious fluid by being rubbed or scratched; the animal is constantly scratching or rubbing itself; the skin is extremely tender of being touched, as if there were subcutaneous soreness; red, burning, tender, and itching swellings; parched dryness of the skin, with absence of perspiration, by obstruction of the pores; harsh, chippy roughness of the skin to the touch; the skin feels like dried fish-skin; or else, perspiration is very easily provoked by the slightest exertion, or there is sweating at night; falling off of the hair; dry, harsh sensation of the hair to the touch; the development of malignant and ulcerative vesicles on the skin, in various parts; callous excrescences; staring, rough, glossless coat; extreme sensitiveness and tenderness of the chest, in particular, to the touch; flaccid, unhealthy puffiness of the skin; eruption of small vesicles throughout the cellular tissue; subcutaneous invermination; the bristles easily drawn, and the extraction followed by slight oozing of blood; subcutaneous lumps and nodosities, sometimes terminating in external development and suppuration; nodosities of this kind especially about the neck (of well-bred horses); frequent rigors and chills in the daytime; shivering fits towards night.

In respect of the Pulse.—Irregular and slightly accelerated; or soft and wavering, without acceleration or fulness; or very small, and somewhat hard, or rather wiry.

In respect of Rumination.—Diminished and imperfect; rumination performed in an erect position; or if casually the animal lies down to ruminate, it quickly gets up again; rumination suspended.

In respect of the Appetite—Increased and morbid hunger, withou much feeding when food is offered; appetite gradually diminished or deteriorated; daintiness in respect of food; the animal appears to seek eagerly aft food which is not offered to it, but when offered, picks at it a little, and leave it; distension and tightness of the belly after the least food; evident inactio of the stomach; coldness of the stomach; accumulation of wind in the intestines, with partial or abundant repulsion of flatulency.

In respect of the Organs of Generation.—Heat and swelling of th testes; excessive exaltation of sexual instinct; nymphomania, or else absolute depression and suspension; discharge of blood or floodings during pregnancy; corrosive discharge of whitish or yellowish matter.

In respect of the Excrements.—Discharge of worms of various kind with the excrements; inaction of the terminal bowel; slow and difficult discharge of large lumpy evacuations; constipation, alternated with diarrhœa excrements mingled with blood and phlegm, or terminating in continued and debilitating diarrhœa.

In respect of the Urine.—Constant urging to stool, with scanty and imperfect discharge, or very frequent discharge of urine.

In respect of the Muzzle, Mouth, Tongue, Throat, Nose, &c.—Pallid, sickly, or yellowish hue of the muzzle, and of the parts about the mouth, eyes, and nose; fissures, and exfoliation of the lips; bloated and ulcerated lips; discoloration, and unhealthy leaden hue or redness, with swelling of the gums; the tongue swollen, and, as well as the mouth, characterized by the development of vesicles more or less ulcerative; mouth and tongue excoriated; abundant secretion of somewhat adhesive saliva; offensive odor (bordering on rottenness) emitted from the mouth; considerable collection of phlegm in the throat and over the palate; difficulty of swallowing, from inaction of the muscles of the throat; internal ulceration of the nose; burning heat, redness, and swelling of the nose; development of pustules on the nose; discharge of blood from the nose in the morning; the nose very dry, or characterized by watery, thick, yellowish, greenish, or bloody discharge of phlegm and matter.

In respect of the Respiratory Apparatus.—Dry cough morning and evening, and during the night; hoarseness, and diminished power of intonation; the neighing, lowing, bellowing, bleating, barking, &c., becomes feeble, muffled, and stifled; shortness of breath, or impeded or oppressed breathing, attended with palpitation of the heart, and throbbing of the enlarged lobe of the right or left lung, provoked by the slightest exertion; a hard swelling is felt in either side, or in the left side particularly, which communicates a palpable pulsation; swelling and induration, or excessive protuberance of the glands of the neck and nether jaw; wheezing, anxious, laborious, and moaning respiration.

In respect of the Extremities.—Rough and fissured skin; coldness, torpor, and numbness; stiffness of the joints; tumefaction of the legs and feet, the latter especially; stiffness of the limbs and joints, provoked or aggravated by cold or by violent exertion; trembling of the fore legs.

KALI SULPHURATUM.

CHARACTERISTIC SYMPTOMS.

In respect of the Excrements.—Severe, continued, and debilitating diarrhœa; diarrhœa, as occasionied by sudden chill or check of perspiration, by being exposed to sudden changes of temperature, or to inclemency of weather; diarrhœa, more especially such as that occasioned by excessive or very succulent or flatulent food; diarrhœa, as occasioned by browsing frosted grass; very liquid evacuations, generally mingled with viscid phlegm; excessively relaxed evacuations, evidently attended with considerable pain; flatulent diarrhœa, especially after drinking, and still more frequently if there has been copious drinking immediately after severe exertion.

In respect of the Movements and Position.—The animal lies stretched out at full length, and can barely be induced to move, or lies flat on the flank, the legs being drawn up close to the belly, and the head stretched backwards; or else, the animal maintains an erect position, the head stretched forward, almost without motion, and moaning continually; or the animal shrinks instinctively, and as if with horror, from food or drink; in very severe cases, the animal becomes insensible, falls in moaning, and struggles violently, ejecting small quantities of sour green matter from the mouth and nostrils.

In respect of Rumination.—Rumination is suspended.

In respect of the Pulse.—In common, it is slightly accelerated, and even sometimes fluttering and irregular, but these are casual and fitful symptoms.

In respect of the Extremities.—Extreme and most unusual degree of coldness; rigidity, with excessive coldness of the limbs; icy coldness of the ears.

In respect of the Urine.—Scanty and turbid.

In respect of the Mouth and Throat.—Deglutition difficult and impeded, perhaps occasioned, to a certain extent, by the constant rising and upward expulsion of flatulency; considerable accumulation of phlegm in the mouth; increased secretion of watery saliva.

In respect of the Skin and External Surface.—The whole of the belly, and especially the left side, inordinately puffed up; the flank is hard and distended, and does not yield to pressure; or else, with more moderate symptoms, there is slight heaving of the flanks.

In respect of the Respiratory Apparatus.—Heavy, impeded breathing, or the breathing slightly accelerated; palpitation of the heart operating to oppress the breath.

KREOSOTE.

CHARACTERISTIC SYMPTOMS.

In respect of the Head.—Dulness; vertigo; heaviness; beating and throbbing in the head; falling off of the hair.

In respect of the Eyes.—Redness and swelling of the lids; chronic swelling and thickening of the borders of the lids; flow of tears, hot, acrid suppuration of the eyes.

In respect of the Ears.—Inflammation and swelling of the ears.

In respect of the Nose.—Sneezing; bleeding of the nose; fetid smell the nose, with loss of appetite.

In respect of the Stool and Urinary and Genital Organs.—Co stipation, with hard, dry stool; diminished secretion of urine; frequent desir to urinate, with copious emission, especially at night; clear urine, with cop ous discharge; profuse, acrid, or bloody discharge from the womb and vagina corrosive, badly-smelling discharge, with debility; burning and swelling of th bearing.

In respect of the Respiratory Organs.—Wheezing, spasmodic cough difficult and anxious breathing; shortness of breath; heaviness and oppressio of the chest.

General Symptoms.—Chilliness; nightly pains; decay of the teeth soon as they appear.

Especially adapted to putrid diseases. In its therapeutic effect, as well in its chemical nature and smell, it much resembles Carbolic acid.

LACHESIS.

CHARACTERISTIC SYMPTOMS.

In respect of the Pulse.—Full and bounding pulse; intermittent irregular pulse; small pulse, with or without acceleration; feeble and quickened pulse; small and intermittent pulse; very quick pulse, with exhaustion

In respect of the Skin and External Surface.—Dry parching hea towards night, and until midnight; sometimes excessive heat, confined almos exclusively to the extremities, but generally extreme coldness, particularly o the lower extremities, if not of the whole surface of the body; profuse, an often fetid, sweat following the hot stage; slow, hectic, nervous, or periodica fevers, attended with gradual or rapid loss of strength and condition; feve recurring at night, or every other night, or every third or fourth night, an attended with progressive wasting of the body; rigors, and violent shiverin and trembling, even during the greatest prevalence of heat; cold and, occasionally, bloody sweat; cold or bloody sweat, with progressive emaciation an shedding of the bristles (of pigs) and of the hair (of animals generally); th last-mentioned symptom often accompanied with general redness of the skin a suffused redness of the pores of the skin, with excessive, continual, and intolerable irritation; oozing of blood through the pores of the skin; extravasation of blood beneath the scarf skin; ulcerative and other wounds and sores which are easily provoked to bleed, and which continue to bleed long and profusely; ulcerative sores, encircled by vesicular or pustular eruptions, or b subordinate ulcers; the skin is variously yellowish or greenish, or characterize by a livid, leaden, or purplish, or even blackish tint, particularly in the vicinit of the sores, &c.; red, and intensely irritative and itching lumps beneath th skin; putrefaction and detachment of the flesh from the ulcers when they hav assumed a cancerous or rotten character; wounds which assume a malignant, mortifying aspect.

In respect of the Disposition.—Peculiar versatility; transitions from intense excitement and acute nervous susceptibility, to sullen, morose, apathetic, and indifferent humor, or utter depression, or *vice versâ*, frantic delirium.

In respect of the Head.—Sudden fits of falling, occasioned by rush of blood to the head and brain (when there is intense heat, and sometimes throbbing, at the root of the horn or ears); giddiness, with staggering and reeling, and, finally, with precipitate fall; excessive giddiness, evinced by reeling, &c., especially after lying down, or first assuming an erect position; throbbing in the temples; excessive tenderness of the head (particularly between the horns or ears) to the touch, the animal suddenly dropping or shaking its head when so touched.

In respect of the Throat.—Excessive dryness of the throat, sometimes merely local, but generally extending through the entire cavity of the mouth to the palate, gums, and glands. Continual effort at deglutition abruptly arrested as if it were by the pressure of some hard extraneous body in the throat; *gulping*, or convulsive effort to swallow, attended with a *frightful gasp;* inflammatory swelling, redness, and soreness of the throat; swelling, redness, and parched heat of the glands of the throat; development of tumors in the throat; incapability of swallowing liquids especially; the slightest pressure, or even touch applied to the throat, occasions evident torture to the animal; the act of swallowing even the saliva occasions severe suffering, as evinced by the movements of the animal; the symptoms have usually the appearance of being more intense after sleeping, or of being alleviated by eating solid food. Swelling and often intense redness of the tonsils; the development of fetid and suppurating, or even putrid ulcers in the back part of the mouth and in the throat; considerable collection of very adhesive, glutinous, or stringy phlegm in the throat.

In respect of the Nose.—The nose is obstructed as if internally swollen; profuse discharge of bright red blood from the nose; profuse discharge of blood of any color, or particularly of dark and blackish blood from the nose; discharge of matter from the nose; the edges of the nostrils are red, swollen, fissured, and excoriated, and there are incrustations of dry or humid scabs in the interior of the nostrils; chronic, dry affection of the nose, as of cold, either characterized by stoppage of the nose, by thin, hot, acrid, or watery discharge, or by copious exudation of thick sanious matter, with soreness and inflammation of the nose; or, also, by profuse, hot, corrosive flow of tears; or, again, by incessant sneezing.

In respect of the Ears.—Diminution and insufficiency of ear-wax; dryness, with or without heat, or swelling of the ears; severe swelling of the internal cavity; discharge of blood from the ears; altered sense of hearing, either to intense acuteness, or to dulness almost amounting to insensibility or deafness. Incrustations, scabs, excoriations, and eruptions of pimples or vesicles behind and around the roots of the ears.

In respect of the Muzzle, Mouth, Gums, Tongue, &c.—Intense dryness, with or without inflammatory swelling, of the whole interior of the mouth and of the tongue, or profuse secretion of watery fluid in the mouth; copious and watery salivation; the tongue is fissured and of a bright, vivid redness; intense inflammation of the tongue; tumefaction, puffed, or bloated state of the tongue, with brownish or blackish hue, and motionless rigidity, as if completely paralyzed; the gums are swollen and so tender as not to bear the slightest touch; the teeth are generally loosened, the gums being retracted from the immediate circumference of the teeth, although so bloated as to rise above the usual degree, and apparently to lessen the length or protrusion of the teeth; the teeth are brittle; discharge of blood more or less bright from the mouth.

In respect of the Appetite.—Absolute repugnance to all food, or repugnance to the usual food, with morbid craving after unnatural or even filthy things; intolerable and unquenchable thirst, with or without total inability to swallow liquids; vomiting sometimes immediately supervenes after eating; or eating is followed by reeling, giddiness, and precipitate falling.

In respect of the Excrements.—Convulsive closing of the anus, with or without slow, difficult, hard, and generally scanty evacuations. Dry, hard, knotty, and discolored excrements, with very constipated condition; evacuations, whether hard and costive, or soft and relaxed, more or less discolored with blood, or with brownish, blackish, or frothy, or bloody-looking matter; expulsion of blood only, or of bloody phlegm; alternation of costiveness and looseness; or, more properly, obstinate and continued looseness, becoming more and more gangrenous, succeeds to the previous costiveness; evacuations especially dark and very relaxed, or liquid evacuations of a fetor almost amounting to putrescence; the various conditions of the excrements often more explicitly characterized by the protrusion of hæmorrhoidal tumors, especially of bleeding tumors, and by protrusion of the intestine; spontaneous evacuations occasioned by paralysis of the hind quarters.

In respect of the Urine.—Frothy urine; urine mingled with blood; brownish urine; yellowish-red urine; continual urging to micturate; frequent and profuse discharge, or spasmodic urging, with difficult, scanty discharge or even retention; paralytic incontinence of urine, with spontaneous discharge.

In respect of the Milk.—Diminished secretion or total drying up of the milk; milk of an altered quality, curdling or readily turning sour, or separating the denser and whiter fluid from the bluish and watery, either by wavy flocculent agglomerations, or even by precipitating instead of consistent, superficial creaming.

In respect of the Organs of Generation.—Discharge of the peculiar glairy fluid from the bearing, which announces parturition or abortion; bloody and mucous discharges; discharges of dark and fetid matters mingled with blood.

In respect of the Respiratory Apparatus.—Close, stifled, suffocative cough; breathing accelerated, short, oppressed, panting, and heaving, attended with violent, continued, or fitful palpitation of the heart.

In respect of the Extremities.—Skin symptoms as previously described; trembling or absolute paralysis of the limbs, especially of the hind quarters, the animal being planted upon its haunches, and making ineffectual efforts to move, at the same time howling or bellowing pitifully.

Staggering gait. Head confused. Sufferings from long standing in the heat of the sun.

LEDUM PALUSTRE.

CHARACTERISTIC SYMPTOMS.

In respect of the Skin and External Surface.—Rapid deposition of morbid fat, which as quickly wastes away; false condition; general bloatedness of the whole surface of the body; development of yellow and black spots or patches on the skin; bluish or livid spots over the whole surface; fever fits in the evening; violent and cold shiverings; perspiration easily provoked; scaling off of the scarf skin; casting of the hair or wool; peculiar patchy decidence of the wool or hair; the wool is readily pulled out; dry, scaling, vesicular eruptions; swelling of the glands of the throat; the skin is flabby and ill-conditioned; the muscular fibre is relaxed and flaccid, and incapable of proper tension; there is considerable enlargement of the belly, and greater puffiness as the flesh falls away; crackling sound upon pressure of the skin, especially of the flanks; general dropsical swelling.

In respect of the Eyes.—The protuberance at the inner corner of the eye is red, and the small vessels of the corner of the eye are turgid; the vessels of the eye are filled with a brownish serous fluid; the protuberance in the corner of the eye is sometimes yellow; the vessels of the eye are red and distended; there is considerable swelling and inflammatory redness of the small protruding gland in the corner of the eye; the inflammatory redness extends to the surface of the eye and to the eyelids; the pupils become excessively dilated; hot and scalding watery discharge from the eyes; accumulation of thick, yellowish, or brownish matter along the margins of the eyelids and in the corners of the eyes, and causing adhesion of the eyelids.

In respect of the Muzzle, Mouth, Gums, Throat, Nose, &c.—Purplish, livid, or leaden hue of the membranes; tumid, bloated, and purple tongue; the gums and the interior surfaces of the mouth, generally, are easily provoked to bleed; *the breath exceedingly fetid*, owing to the fetor emanating not only from progressive intestinal decomposition, but occasioned by the local condition of the membranes.

In respect of the Appetite.—Increase of thirst in comparison to the more or less rapid decrease of the appetite; feeble, maudlin, or dainty hunger, which is readily appeased; craving for cold water; internal heat, manifested by constant and absorbing thirst; peculiar thirst of hectic fever.

In respect of the Respiratory Apparatus.—Catching of the breath; interrupted respiration; breathing momentarily suspended and terminating in cough; accelerated or puffing respiration; or thick, oppressed breathing, *aggravated by motion.*

In respect of the Excrements.—At first constipation, resulting in protracted and unmanageable diarrhœa; excessive flatulency and frequent expulsion of wind; the diarrhœic evacuations early present an admixture of blood and phlegm, which continue to increase (in proportion to the excremental matter).

In respect of the Urine.—Frequent and profuse discharge; or constant inclination or urging to stale, followed by inconsiderable emission and the immediate return of the urging; the urinary passage is swollen and obstructe and the orifice nearly closed.

In respect of the Extremities.—Inflamed or dropsical swelling of th limbs; hot swelling of the legs above and below the knee-joint; tenderness the soles of the feet, evinced by the cautious manner in which the animal pic its way and grounds the feet; hard and distended tumefaction of the whole le and of the knee-joint in particular; stiffness of the joints in general, and of th pastern and fetlock joints especially; stiffness of the knee, with distension the skin; cracking of the knees when moving; trembling of the knees, wheth in rest or motion; nodosities in the joints generally.

LYCOPODIUM.

CHARACTERISTIC SYMPTOMS.

In respect of the Skin and External Surface.—Increased heat the root of the horn; arid dryness of the skin; scaly dryness; rough and hars feeling of the skin to the touch; cracking, puckering, and wrinkling of th skin; bare spots, occasioned by the total decidence of the hair or wool fro certain places; large red patches, spots, or stains upon the skin; variegate dandriff; callous vesicular eruptions of a brownish color, intersected in a directions, in the midst of dense incrustations, by cracks and fissures; sor ness and local incrustations; absence of sufficient vital heat; fetid or adhe sive sweating at night; slow nocturnal fever,—the chill occurring toward evening.

In respect of the Appetite.—Craving, morbid, immoderate, or unnatural appetite; a total absence of appetite; if any false appetite before eating the touch of food immediately induces an apparent repugnance to eat; thirst, constantly recurring at night.

In respect of Rumination.—Suspended, or indolent, languid, and imperfect.

In respect of the Excrements.—Pale and putrid evacuations; obstinate and continued costiveness; emission of phlegm, mingled with blood during the evacuations; flatulent distension of the belly after evacuating; sometimes ulceration during pregnancy.

In respect of the Urine.—Incontinence and spontaneous emission; strong and constant inclination and urging to stale, and very frequent discharges of urine; blood is passed instead of water; dark-colored urine; yellow-brownish urine; saffron-colored urine.

In respect of the Organs of Generation.—Development of an inflammatory scarlet petechial protuberance at the extremity of the organ, or in the interior of the bearing, accompanied by thick, yellowish or creamy discharge. Constant irritation of the bearing in the female, evinced by her rubbing the parts against trees, walls, and the like harsh and rough surfaces; undue and continued dryness of the vagina. The formation of nodosities, calculi, and hard lumpy tumors about the lacteal glands.

In respect of the Stomach and Digestive Functions Generally.—Enlargement of the region about the stomach, so tender that the animal shrinks from the slightest touch or pressure. Enlargement and hardness of the liver and adjacent parts, also very tender to the touch; crampy, clawing, stinging pains about the liver, spleen, and stomach, evinced by sudden interruption, retention, and catching of the breath; distension and appearance of excessive repletion in the stomach generally. Spontaneous flow of water from the mouth, occasioned by acid rising and nausea. Vomiting of bilious yellow or greenish matter; or vomiting of undigested food and bile—sometimes also of blood. Fits of vomiting, which frequently occur at night, or before feeding in the morning.

In respect of the Eyes.—Yellowness of the skin of the adjacent parts; faint yellow hue of the conjunctiva; suffused brownish-yellow hue of the membranes of the eye; the eyelids are red, inflamed, and coated with purulent matter, which agglutinates. There is more or less bright, vivid, inflammatory redness of the eyes, with extreme contraction of the pupils; specks, more or less opaque, upon the cornea; ulceration of the cornea; the formation of ulcers on the inner side of the eyelids; tenderness of light and lachrymation, provoked by exposing the eyes to the strong light of day, or even to artificial light; watery discharge from the eyes; development of stye upon the eyelid; the sight is obscured by a whitish matter, which overspreads the surface of the transparent parts; discoloration of the iris.

In respect of the Ears.—Internal inflammation and ulceration; accumulation of matter in the ears. The animal starts at the least noise, but the ears are motionless, or hang in a peculiar listless manner, but are never erect or in play. In other cases the animal appears unconscious of sound.

In respect of the Muzzle, Mouth, Teeth, Gums, Throat, &c.—Dryness, heat, and yellowish hue of the muzzle and mouth, and similar color, more or less brownish or leaden, of the membranes of the nose and mouth generally. The glands of the nether jaw swollen;—the upper lip slightly enlarged; paleness and ulceration of the lip. The gums swollen and ulcerated; the teeth yellow, and further characterized by a peculiar and continual (not spasmodic) grinding; the mouth is dry; the superficial membranes being tense, and the tongue enlarged, dull, and stagnant, or characterized by peculiar spontaneous motion. The tongue is also excessively foul, loaded with a yellowish-brown or blackish-brown fur. Bleeding of the mouth; noisome, rotten, putrid smell of the mouth; the nostrils obstructed, or characterized by increased susceptibility of scent; discharges of blood from the nose; twitching of the muscles of the nose; swelling, with a very offensive discharge; dryness and heat of the nose;—incrustations within the nostrils; ulceration of the nostrils. Heat, dryness, and inflammatory redness of the throat; redness, inflammation, and suppuration of the tonsils.

In respect of the Pulse.—Hard and accelerated, or very small and accelerated.

In respect of the Organs of Respiration.—Accelerated respiration, with panting, and heaving of the flanks;—cough at night, or after deglutition of fluids. Hoarseness and roughness of respiration. Continual, small, subdued, dry cough. Cough, with ejection of blood and matter, or of both. Short, laborious breathing; oppressed breathing, accompanied by an accelerated and more perceptible, but feeble and fluttering pulsation of the heart; or, in other cases, by a full, thick, impeded, and forcing palpitation.

In respect of the Extremities.—Callous excrescences; spontaneo trembling; coldness; coldness, alternated with heat and swelling; *cold swe with excoriation;* spontaneous oscillation of the hind quarters; distortion a swelling of the joints; enlargement of certain tendons (conglobate glands splint; windgalls and bog-spavin, ringbone.

MERCURIAL PREPARATIONS.

MERC. VIVUS; MERC. CORROS., MERC. JODATUS.

MERCURIUS CORROSIVUS.

This preparation of Mercury is more suited to severe straining and blood (and mucous) stools in dysentery, especially when the irritation involves th urinary passages also.

CHARACTERISTIC SYMPTOMS.

In respect of the Head.—Stupor. Vertigo. Violent rush of blood t the head.

In respect of the Eyes.—Swollen, staring, glassy eyes; contraction o the pupils.

In respect of the Mouth and Throat.—Inflammation of the throat gums and lips swollen; profuse flow of saliva of a disgusting smell.

In respect of the Stomach and Bowels.—Vomiting, even of blood; inflammation of the stomach, with gangrene. Ulcers in the stomach. Excessive colic, with distended and painful abdomen. Diarrhœa, bloody, with straining of the bowels, and complication with the bladder, *bloody urine;* violent dysentery. bloody evacuations; discharge of blood from the bowel.

In respect of the Pulse.—Irregular, small, contracted pulse; quick, feeble, tremulous pulse. Hectic fever, chilliness. Cold sweats. General symptoms: emaciation; spasms; convulsions; paralysis.

Much used (even externally as a lotion and as an injection) to heal up abscesses and ulcerations used for *spavins; thickening of tendons*, and *bursal enlargements.*

MERCURIUS JODATUS (Iodide of Mercury).

This chemical combination of Iodine and Mercury preserves many of the qualities of each of its elements. It will be found valuable in glandular swellings, especially in the throat. Compare Iodine. *Merc. jod.* has been recommended for inflammation of the udder; but Phytolacca is far better.

MERCURIUS VIVUS.

CHARACTERISTIC SYMPTOMS.

In respect of the Pulse.—Hurried, or accelerated and irregular; small and tremulous, or slow and tremulous; slow and intermittent; small and accelerated; tremulous and accelerated, or irregular, small, and tremulous.

In respect of the Skin and External Surface.—Profuse and colliquative sweats; profuse sweating at night, and during rest; sweating while eating or after eating; saffron-colored sweat; offensive sweat; sweat with a peculiar sour and nauseous odor. Recurrence of the fever-symptoms towards night; shivering, rigors, and coldness of the entire frame upon waking; rigors, attended with intense coldness of the extremities, or with the manifestation of a leaden or livid hue of the skin, upon examination, or evinced in the bare parts. Intense heat of the head between the ears, or at the root of the horns, as well as (with dryness) of the muzzle, and of the eyes, mouth, throat, neck, and adjacent parts, with extreme coldness of the rest of the body, characterized by the exudation of cold profuse sweat, settling like dew upon the coat, and accompanied with violent shivering and trembling of the body and limbs. Inflammation and ulceration of the glands generally; pustular, moist, oozing eruptions, which quickly form incrustations, and which bleed very readily when touched, the scales being easily removed by friction; pustular eruptions exuding thick matter; enlargement and excrescences of the bones; affections of the bones generally; swelling, enlargement, thickening, and hardening of the coatings of the bone; abscesses of the joints; mealy, dry, irritative, vesicular eruptions; livid and spreading gnawing ulcers, characterized by the presence of proud flesh, and bleeding upon the least touch. Yellow color of the skin, conveyed to the transpiring fluids.

In respect of the Muzzle, Mouth, Gums, Tongue, Throat, Nose, &c.—Yellow or blackish color of the muzzle; the interior of the mouth inflamed and swollen, red and excoriated, or bluish, or ash-colored and bloated; ulcers in the vicinity of the salivary glands, with copious and excessive secretion of very offensive, or even bloody saliva. Extreme dryness of the mouth; or, otherwise, a profusion of viscid phlegm in the mouth. Eruption of numerous small white vesicles in the mouth; aphthæ; blistered and ulcerated mouth; carious ulceration of the palate. The tongue puckered, and feeling shrivelled to the touch, as if scalded; the tongue hard, swollen, inflamed, ulcerated, motionless, or quivering. Moist tongue, with thick, white coating of phlegm; or dry tongue, with blackish coating. Suppurative inflammation of the tonsils; swelling, redness, and severe inflammation of the throat, and adjacent parts. Continual and ineffectual effort to swallow or very convulsive deglutition. Fluids cannot be swallowed, and are ejected through the nostrils in the effort. The teeth blackened, loose, and cast out. The gums ulcerated, or bluish and very tender; gums characterized by proud flesh, and readily provoked to bleed; gums parted from the surface of the teeth. The lips rough, harsh, dry, and of a dark-bluish or brownish color. Yellow incrustations about the lips and muzzle. The corners of the mouth scabby, cracked, and ulcerated. The glands of the lower jaw inflamed and swollen; the jaws clenched and fixed. The bones of the nose large and very tender. Constant fits of sneezing.

In respect of the Eyes.—The margins of the eyelids ulcerated scabby; the eyelids red, tumid, and inflamed; extreme tenderness of lig inflammation of the eyes; the conjunctiva or sclerotica vividly red; copi watering of the eyes; eyes fixed and sparkling; scabs concreting around eyes; injection of the vessels of the sclerotica, or of the outer corners of eyes. Spasmodic serration of the eyelids.

In respect of the Ears.—Insufficient quantity of the cerumen; ten ness, inflammation, and swelling of the adjacent glands. Excrescences of nature of proud flesh in the ears, emanating from their excoriated and ul ated condition.

In respect of the Milk.—Unnatural drying up of the milk.

In respect of the Movements.—Great restlessness and uneasin inability to stand up long together, and equal inability to retain a recumb position; the animal stands motionless, with the head stretched out, or pa abstractedly backwards and forwards; disposition to remain apart; phren furious delirium; plunging with the head against solid objects; reeling to left, staggering, and falling precipitately. After falling, champing *furiou or lashing with the tail;* frantic and precipitate career; convulsive and spasmo movements; or totally inert, torpid, motionless, and senseless prostration.

In respect of the Appetite.—Total loss of appetite; or craving ap tite, which the utmost voracity cannot appease; appetite unnaturally increas craving after improper food, or inclination to eat things unfit for food; dai appetite, which is glutted at the first mouthful; night and day, continu intense, unquenchable, and burning thirst.

In respect of the Digestive Functions Generally.—Violent fits vomiting, with spasmodic and convulsive twitches and contortions.

In respect of the Stomach and Intestines.—Excessive tenderness the chest and upper part of the stomach; the region about the liver is so tend that the animal cannot bear the slightest touch; the animal winces and shri when the hand is laid upon the flank; great soreness and tenderness of region about the navel, and of the stomach generally, to the touch; the be hard, knotty, and distended.

In respect of the Excrements.—Hard, knotty, dense (very pale a yellow, or very dark) evacuations; constant but ineffectual urging; or v loose evacuations, more or less mingled with blood, and characterized by presence of much phlegm; phlegm, mingled with blood, evacuated with sev straining; saffron-colored, brown, or red discharges of excrement, excessiv offensive, and even putrid, and more or less qualified by the presence of b and phlegm; frothy evacuations; threadworms observable in the evacuatio

In respect of the Urine.—Very frequent and profuse discharges urine (usually accompanied with and characterized by excessive wasting the body); urine very dark, bright yellow, blood color, or creamy; turg thick, flocculent, or depositing a rust-colored sediment; urine excessiv offensive; discharge of blood in the place of urine; discharge of flocculent thready phlegm after staling.

In respect of the Organs of Generation in the Female.—Floodi discharges of bright red arterial blood from the womb; protrusion of vagina; swelling and induration, with extreme tenderness of the udder a lacteal glands; suppurative ulceration of the lacteal organs.

In respect of the Respiratory Apparatus.—Dry cough; continual hoarseness and huskiness; husky, stifled, and insonorous cough; ejection of pure blood from the mouth and nostrils by coughing; accelerated, short, difficult, panting, or oppressed inspiration; heaving of the flanks.

In respect of the Extremities.—Convulsive movements (more distinctly developed in the extremities); in other respects as regards the bones, cuticle, glands, hair, &c., &c., the general symptoms before recited may be locally applied.

Summary.—Catarrh; common cold. Soreness of the throat. Enlarged glands, before and after suppuration. Abscess of large size, secreting a thin, badly-smelling pus. Mange. Grease. Swelling of the legs; moist, oozing eruptions, that form a thick scab. Abscess in, and swelling of, the joints. Diseases of bone; hardening or caries of the bones. Pains in the teeth of dogs. Sweating in horses after a meal. Heat about the head and ears, with coldness of other parts. Yellow color of the skin of the mouth, nose, and white of the eyes. Interior of the mouth ulcerated, or inflamed and swollen. Mouth hot, dry. Tongue dry and parched, or with a yellow-brown, or even blackish coat. The teeth become blackish, loose, and ultimately fall out. Throat swollen and ulcerated; difficulty in swallowing. Nostrils red and inflamed, with copious discharge. Foul-smelling discharge from the nose. Breathing oppressed; heaving of the flanks. Cough frequent; incessant cough; sometimes hoarse, apparently from irritation. Pulse irregular, weak, small, tremulous. Considerable weakness of the body and legs. Pain and tenderness, in the region of the liver, and stomach, to very slight pressure. The animal flinches. In dogs the belly feels hard and knotty. Excrement passed in small lumps, covered with a slimy mucus. Diarrhœa, consisting of mucus, or slime and blood. Worms, both ascarides and the teres. Urine brown, thick, or sometimes bloody.

MEZEREUM (Daphne).

Mercurial affections, especially those involving the periosteum and bones.

Inflammation of the periosteum, or *covering of the bones*, particularly of the fore leg, with aggravation at night.

Ulcers of the bones, with disease of the soft parts; *fistulas of the bones.*

Rheumatic pains, of one side, with chills and shuddering, aggravated by the touch, and by motion of the affected parts.

Swelling of the glands.

Ulcers, *sensitive* and *easily* bleeding; painful at night; the matter from them forms a scab.

Leucorrhœa, corroding, of semi-transparent mucus.

Cough, deep, hollow, hoarse, with vomiting after eating.

MILLEFOLIUM (Yarrow).

Principally used for hemorrhages of almost every kind; flow of blood from the nose, lungs, kidneys, bowels, and genital organs; dysentery; hæmorrhoids, or bleeding piles; hæmaturia, or bloody urine; flow of blood after or with abortion; leucorrhœa.

Dose.—From three to ten drops, from thirty minutes to two or three ho
according to the size of the patient and the urgency of the symptoms.

MURIATIS ACIDUM.

CHARACTERISTIC SYMPTOMS.

In respect of the Pulse.—Intermittent; feeble, accelerated, and in
mittent; or small, accelerated, and intermittent.

In respect of the Skin and External Surface.—Black pores, bl
pustules; putrid and gangrenous ulcers, with red and elevated eruptio
eruptions of a scaly or crustaceous description; vesicular eruptions, termir
ing in patchy, scabious surfaces; eruptions of the nature of mange, charac
ized, in respect of muriatic acid, by a peculiar parched, harsh, and contin
dryness of the skin, and by the rare occurrence of perspiration; coldness of
whole frame predominates over heat; shivering fits, which do not terminat
heat, however transient; shivering, with constant yawning and stretching (
sence of thirst); hot fits, accompanied with excessive uneasiness and restl
ness (absence of thirst); sweating sometimes occurring during the first sle
but rarely.

In respect of the Movements and Position.—Repugnance to mot
or exertion; unconquerable indolence; excessive inclination to lie down a
to remain undisturbed, and apparently perfectly apathetic; upon rising, r
ing giddiness supervenes; the animal staggers, wheels to the left, totters, a
falls, after which nothing will succeed in rousing it for some time; it appe
insensible and indifferent.

In respect of the Extremities.—Putrid ulceration wherever so
occur upon the legs; continual coldness of the feet and legs; more or less
tense swelling of the knees; tottering movements from the yielding or bendi
of the knees under the weight of the body, which they have not strength
sustain; total inertia of the tendons and ligaments; muscular debility,
creased by the morbid state of the bones and coating of the bones; flac
muscular fibre; trembling of the knees and of the limbs generally.

In respect of the Respiratory Organs.—Deep and groaning breathir
internal gurgling, stifled or sobbing, insonorous, husky cough, indicative
internal decomposition; obstinate and continual hoarseness; the pecul
moan emitted by the animal strongly resembles that uttered by the female
the point of labor or of aborting (sometimes with the small, wiry, intermitt
pulse of aborting, and forcing, with pains also of a similar description).

In respect of the Milk.—Decrease and drying up of the milk.

In respect of the Appetite.—Diminished, or entirely absent; or
other cases morbid and voracious appetite, attended with intense thirst.

In respect of the Rumination.—Totally suspended.

In respect of the Excrements.—Inertia of the rectum, which rend
the evacuations slow and difficult; very small evacuations; loose and liq
evacuations, attended or followed with considerable squeezing of the parts,
dicative of local heat, pain, or inconvenience occasioned by the dischar
purple and distended hæmorrhoidal tumors; spontaneous discharge of liq
evacuations, mingled with a serous fluid, in the act of staling; protrusion

the intestine, provoked by the act of staling; ejection of blood with the evacuations; bleeding hæmorrhoidal tumors.

In respect of the Urine.—Colliquative discharges of clear watery urine; constant inclination to micturate, and copious discharge.

In respect of the Organs of Generation in the Female.—Forcing, apparently muscular action, having considerable affinity to the throes of labor or abortion, and arising from contraction of the womb.

In respect of the Stomach and Intestines.—Repletion of the belly and distension, with flatulency.

In respect of the Eyes.—The eyelids are red and swollen.

In respect of the Ears.—Crustaceous, ulcerative, or vesicular eruptions in the ears.

In respect of the Muzzle, Mouth, Throat, Tongue, Teeth, Nose, &c.—The muzzle is characterized by scabs and incrustations, or eruptions of a pustular or vesicular character, without incrustation; bloatedness of the nether lip; putrescent condition of the gums; the mouth is dry, whilst the tongue is paralyzed; the tongue parched; ulcers and pustules on the tongue; deadness or torpor of the tongue; copious salivation; the throat sore; discharge of serous and malignant matter, or of thick, yellow matter, from the nose; the nose ulcerated and stopped up.

NATRUM MURIATICUM.

CHARACTERISTIC SYMPTOMS.

In respect of the Skin and External Surface.—The hair falls off in large quantities, or may be removed by the handful at a time; scurfiness of the skin; swelling of the veins; horny or other callous excrescences; excessive sensitiveness of the region of the stomach, flanks, and back; those parts quiver, or are spontaneously retracted, from the touch; copious and over-abundant perspiration with the least exertion; perspiration on first passing from rest to motion, whether in the morning or at any other time; perspiration which is very long in drying, or which is aggravated (sometimes) by the friction used to dry the animal; the animal shivers ceaselessly; general tendinous flaccidity and relaxation; the hair or wool lank or limp; the *wool loses all its elasticity;* the close spiral curl of the wool becomes extended; gradual and increasing appearance of hair amongst the wool; coarseness, or very great attenuation of fibre; stagnant and excessive, or deficient yolk; the fibre of the wool is harsh to the touch; flabbiness of skin and emaciation.

In respect of the Ears.—Hot and swollen; hearing evidently dull and obtuse; thick matter discharged from or accumulated in the ear.

In respect of the Muzzle, Mouth, Throat, Tongue, Gums, Nose, &c.—Fistulous ulceration; or putrid ulceration and inflammation of the gums, with puffy swelling; teeth dislodged; vesicles in the mouth; vesicles on the tongue; profuse secretion of saliva; the tongue apparently insensible on one side; scurfiness of the nose and muzzle; muzzle yellowish or gray; vesicular eruptions about the nose; muzzle and lips dry, fissured, harsh, and rough; great deterioration or total suspension of the scent; the animal is observed frequently to sink the nose between the fore feet or paws, and to rub severely, or to be constantly rubbing one side of the nose or the chin upon th manger, &c., movements which are provoked by boring at the nose.

In respect of the Appetite.—Craving and eager seizure of the food without, however, eating at all, or with inclination to eat only a few mouthfuls; apparent abhorrence of food, the animal shrinking from it, and crouching in an opposite corner when food is placed in the manger, trough, &c. total absence of appetite, and continual thirst; inflation of the belly, and uneasiness after eating, characterized by a peculiar grunting with sudden expulsion of the breath.

In respect of the Stomach and Intestines.—Loud rumbling of win in the intestines; excessive distension; vomiting of undigested food, an sometimes of bile.

In respect of the Excrements.—Continued, alternated or intermitten and periodical costiveness; ineffectual and continual urging, or urging with deficient discharge; evacuations hard and dry (or sometimes hard and covere with glairy slime), and detached piecemeal,—or, as a first symptom, or after or alternately with, costiveness—excessive and mucous relaxation; long-continued diarrhœa, with discharge of matter, or sometimes of blood; ver frequent evacuations, with protrusion of the intestine; spontaneous evacuation.

In respect of the Urine.—Spontaneous discharge of urine.

In respect of the Organs of Generation.—Excessive and continua heat; heat unappeased by copulation. (These symptoms are further characterized by excoriation, vesicular eruptions, and constant itching of the parts, as also of the thighs, and interstices between the thighs.)

In respect of the Respiratory Apparatus.—Continual, husky, internal cough; morning cough; hoarse or moist cough, or with ejection of blood or phlegm, and vomiting; chronic cough,—or spasmodic cough, in a recumbent position; short, obstructed, difficult, hoarse, or wheezing respiration, with violent palpitation of the heart, or with periodical or irregular palpitation; offensive breath.

In respect of the Eyes.—Constant tearfulness; great weakness of the eyes, with blinking or drooping of the eyelids; discharge of matter from the eyes, and adhesion to the lids; sometimes, also, continued irritation of the eyes, with heat, redness, or dryness, almost amounting to inflammation.

In respect of the Movements.—Great inclination to lie down, which, however, provokes or aggravates the sufferings, so as to compel the animal to get up again; continual changes of position from the recumbent to the erect, and *vice versâ*, with uneasiness; or indolent weariness, and repugnance to exertion; if put to work, the animal moves languidly, and with a drooping gait; twisting, screwing, and curling movements of the tail.

In respect of the Extremities.—Uncertain, faltering, stumbling step, with oscillation of the legs, caused by paralytic debility; swelling and coldness of the legs and feet; the cutaneous symptoms as already described.

Has been used successfully for rot in sheep.

NITRI ACIDUM.

CHARACTERISTIC SYMPTOMS.

In respect of the Pulse.—Intermittent and irregular.

In respect of the Skin and External Surface.—Coldness over the whole surface of the body; constant coldness; sweating, accompanied with the emission of an odor, like that of urine, from the skin; heat, rarely developed, but if present, accompanied with great dryness of the skin, and occurring chiefly, if not solely, at night; black pores; brown or reddish spots and patches; stained muzzle; callous excrescences and protuberances; carious affections; cracking of the skin; falling off of the hair, &c.; great tenderness of the scalp, and of the bony parts, produced by ulceration of the bones; withering away of the frame, with puckered skin, lankness, and protrusion of the bones; inflammatory swelling, oozing, and even bleeding, of the urinary organs; swelling of the glands of the neck, and between the fore legs.

In respect of the Movements and Position.—The animal is reluctant to move, stands with the legs apart, especially the hind legs,—sometimes, also, the fore legs,—or with the legs stretched forward and backward, as if in the position for staling; or with the legs closely huddled together under the belly; or else it lies down stretched upon the flank, and with the head stretched backwards.

In respect of the Muzzle, Mouth, Throat, Nose, &c.—The muzzle is discolored and stained; black or brownish spots on the muzzle; black pores on the muzzle; lips swollen, cracked, and discolored; glands of the nether jaw swollen; scabby clustered vesicles on the muzzle; intense dryness of the mouth (with thirst); the whole of the internal surfaces of the mouth are scarified; putrid and rotten smell emitted from the mouth; increased secretion of saliva, the gums swollen and bleeding, the teeth loose and yellow; the development of a single malignant ulcer in the throat; the tonsils red and swollen; the nose emits a very offensive smell, as of rottenness; breathing through the nostrils renders this fetor more perceptible and offensive; black blood discharged from the nose, or very dark and putrid matter.

In respect of the Eyes.—The upper lid falls over the eye; the eyes are very tender of light, and discharge much water when opened by force and exposed to the light; the conjunctiva and iris are discolored; there are spots on the cornea; development of ulcers on the cornea, which perforate it, and allow the aqueous humor to exude from within; granulating discharge; the conjunctiva is red and inflamed; the lids are much swollen, and the inner surface is ulcerated; the margins of the eyelids are either scabby or blackish; the eyes are hollow and sunken.

In respect of the Appetite.—Morbid and irregular; sometimes craving, sometimes deficient, but rarely wholly suspended; intense thirst.

In respect of Rumination.—Very imperfect,—*never occurring during recumbency*,—and sometimes entirely suspended.

In respect of the Milk.—First, deterioration, with copious secretion; sometimes suffusion of red, or very minute thready streaks of red,—then diminished secretion, and even total drying off of the milk; drying off of the milk during pregnancy.

In respect of the Stomach and Intestines.—Flatulent disten with continual rumbling, or rather bubbling (and shrill sound) in the intest

In respect of the Excrements.—Evacuations characterized by presence, or even predominance, of undigested food, and being very offens very loose and putrid evacuations; blackish evacuations, with rotten smell evacuations with very black blood, emitting an intolerably putrid odor; frequent evacuations; these symptoms are often preceded by a species of tiveness peculiarly dry,—hard, and often difficult evacuations,—or by cost ness with irregular discharges.

In respect of the Urine.—Spontaneous emission of excessively offen urine.

In respect of the Extremities.—Oscillation and giving way of joints, especially of the knee, pastern, and fetlock.

NUX VOMICA.

CHARACTERISTIC SYMPTOMS.

In respect of the Pulse.—Full and hard, either with or without ac eration; small and intermittent, or intermittent, small, hard, and accelerat small, wiry, quick pulse.

In respect of the Skin and External Surface.—Profuse and offens sweat; cold, clammy, and offensive sweat; sour-smelling sweat; sweati chiefly in the latter part of the night; chills, with partial heat and shiveri ending in sweating, and chiefly occurring in the evening, during the night, towards morning; great languor, with uneasy and pitiable expression bef the fever fits; crouching together, and huddling up in a heap, or seeking shel and covering; the animal burying or coiling itself in the litter during the fe fits; livid spots or patches on the skin, having the appearance of extravasat blood; the skin is very cold during the shivering fits, and especially at the tremities, the muzzle being dry, and often livid; the skin, on close observati (as well as the membranes of the mouth), will be remarked to have a yellowi hue, or to have less of the bright flesh-color than usual. (This is particular noticeable in white pigs.)

In respect of the Movements.—In this respect there is an extraordina variation; we may remark, however, on the one hand, the animal standi immovably, with the back bent, the legs closely huddled together, moanin but apparently insensible; or a drowsy, stupid, lethargic condition, the anim remaining coiled up for hours together, and barely even raising the head, or, all events, showing no inclination to answer the call; or, after the least exe tion, the first action of the animal is to lie down, which it does in a peculia drooping manner,—rather falling than extending itself gradually; or, on th other hand, there may be a peculiar and characteristic restlessness, especiall after eating or drinking; the animal gets up from one place, moves to another, at a slow and measured pace,—with the head hung down,—and drops down again (often with a moan or whine),—immediately afterwards repeating the same operation, and so on, until the lethargic drowsiness supervenes, and it becomes stupid; at other times, every such movement terminates in a giddy fit, with whining, and revolving motion—(usually to the left), as of a kitten after its own tail, only slow and deliberate, not dancing—these revolutions quickly ending in a precipitate fall; or again, we may observe a peculiar and rapid muscular vibration, as in chorea; or rapid and twittering oscillation of parts of the body and limbs; or vertical oscillation of the head and neck; or convulsive tendinous twitches, with torsion, &c., of the limbs, when in a recumbent position.

In respect of the Extremities.—Sweat, with coldness of the thighs, chiefly during the night; oscillation, wavering, tottering, and trembling of the legs, and sudden yielding and forward motion of the knees under the weight of the body when standing; the legs are sometimes almost insensible, and will bear a severe blow without any signs of pain; at the same time they are cold, and often very clammy.

In respect of the Stomach.—Vomiting after eating or drinking, especially when the characteristic uneasiness is intense, or more particularly when giddiness is its particular feature; sour-smelling, acid, frothy vomits, sometimes, also, blackish, or occasionally clear and watery vomiting of phlegm and froth only; hardness, tightness, and excessive distension of the belly after eating; swelling, particularly of the left flank, but of both flanks more or less; sideway enlargement of the stomach, giving the animal a peculiar appearance from behind, as if the flanks were loaded; the belly is very tender of the touch; excessive tenderness of the region of the liver, the animal shrinking from the slightest touch, or cowering before it is touched; the stomach is puffed up with wind, which is not expelled.

In respect of the Respiratory Apparatus.—Accelerated or laborious respiration, or impeded breathing, or simply rapid and panting respiration; dry, hoarse cough; coughing, provoked by first moving, or by first going into the open air; breathing heavily, with the head extended, and moaning.

In respect of the Eyes.—Redness of the conjunctiva, with prominent or protruding condition of the eyes; bloodshot eyes, extravasated blood discoloring the eyes, the sclerotica sometimes yellowish; the eyelids swollen and red, and the eyes sometimes very tender of the light.

In respect of the Muzzle, Mouth, Tongue, Throat, Nose, &c.—The muzzle dry and hot; the mouth and tongue are intensely dry; the tongue thickly coated with white, sometimes very adhesive phlegm; the palate is swollen and inflamed; accumulation of white or yellowish phlegm in the mouth; offensive, death-like odor, emitted from the mouth; ulceration of the gums; swelling and putrescence, with bleeding of the gums; the *uvula and tonsils are swollen and inflamed;* dark brown color, or even sooty color of the tongue, surrounded by the vivid redness of the margins; the tongue cracked, or torpid; *looseness of the teeth;* the nose is hot, dry, and inflamed, the scent intensely quickened, or very dull; stoppage of one nostril, with thick or watery discharge from the other, or watery discharge from both nostrils, or discharge of clotted, coagulated, sometimes pale, but, more frequently, very dark blood.

In respect of the Appetite.—The animal ceases to eat (or to ruminate), or else there is very fitful appetite; generally thirst, occasionally attended with aversion to drinks.

In respect of the Excrements.—The presence of threadworm in the evacuations; prolonged and severe costiveness, with intestinal inertia; slow,

difficult, and partial evacuations ; excrements concreted into enormous lun
which cannot pass without separating ; the anus closes tightly in the midst
the evacuation ; semi-liquid evacuations, or evacuations of loose matter c
taining hard lumps ; loose evacuations, tinged with blood, or mingled w
thick or watery phlegm, and which are insufficient ; swelling about the alv
orifice, which is tightly closed ; slimy and loose evacuations ; costiveness a
looseness in alternation.

In respect of the Urine.—Frequent discharge of pale urine ; or v
scanty discharge of dark-colored, or even bloody urine, or difficult drop-c
charge of urine.

In respect of the Organs of Generation.—Increase in the sexual
stinct ; very strong heat ; swelling, redness, and intense heat of the beari
(in the female), with or without protrusion of the vagina.

Summary.—Loss of appetite. Costiveness. Piles in dogs. Evil effe
of overdriving, or putting a horse beyond his pace. Uneasiness ; restlessne
trembling of the limbs. Sudden failure of strength. Convulsive fits. Vom
ing of food soon after the meal. Uneasiness after food. Stomach distend
Contractive cutting pain, which draws the animal up into a heap, like col
accompanied by obstinate constipation. Fæces too large to pass. Coldnes
shivering. Twitching in the muscles. Dulness ; stupid look ; difficult
move ; takes no notice when spoken to. Drowsiness. Constantly lying dow
Pulse full and frequent. The head seems too full of blood. Eyes red, i
flamed. Eyelids red and swollen. Nostrils obstructed. Fetid smell fro
the mouth. Rheumatic pains in the back, manifested by an arched conditio
Locked-jaw. Coat rough, staring.

OPIUM.

CHARACTERISTIC SYMPTOMS.

In respect of the Pulse.—Intermittent, imperceptible, slow, small,
very full pulse,—the pulse being either accelerated or hard, constitutes a di
qualifying condition in the inferior animals as regards opium ; we may som
times observe a degree of acceleration in the pulse, which, however, in gener
subsides, as the more characteristic symptoms supervene ; we know of no i
stance in which hardness of pulse has been associated with these symptom
the peculiar characteristic features are slow, full, and impeded pulse ; sma
ness and intermittency are generally associated with and illustrative of oth
characteristic morbid manifestations ; the imperceptible or suppressed puls
tion is also strongly associated with total senselessness and convulsive mu
cular action.

In respect of the Skin and External Surface.—General coldnes
with local heat, particularly of the head and root of the horns,—or, som
times, heat of the body with coldness of the extremities, and intense coldne
of the ears ; scaling off of the scarf skin ; bluish patches upon the skin ; puf
irregularities of the surface, without discoloration ; occasionally hot sweat
bloatedness and swelling of the veins of the head in particular, or only of th
head ; peculiar sunken appearance of the sides of the head.

In respect of the Eyes.—Hollow appearance of the eyes ; eyes wi open and convulsed, or half closed, fixed, *glassy*, *protruding*, and convulsed; peculiar prominence of the eyeball, with intensely dilated and immovable pupils; eyes as if starting from the sockets; drooping, and even reversion, or sometimes quivering of the eyelids; redness, and inflammatory appearance of the conjunctiva; distortion of the eyes, which remain fixed.

In respect of the Movements and Position.—Lethargic prostration; or if standing, reeling and staggering, and falling headlong, after which the animal generally remains motionless; sometimes furibond motions at first, quickly succeeded by inability to move, and insensibility; the animal retains the position in which it falls; if standing, the animal seems to have all the weight of its body thrown forward, the head, neck and shoulders stretching forward beyond the usual position, so that the fore legs have a backward, slanting direction, and are planted beneath the belly instead of the shoulders; or, otherwise, the animal has a backward inclination of the body, and even falls upon the haunches, the hind legs being extended under it; convulsive, muscular movements throughout the body.

In respect of the Mouth, Tongue, Throat, &c.—Distortion of the mouth, and muzzle and lips swollen; mouth open, with the lower jaw hanging down, or the mouth closed in some animals (such as the pig), with dejection of the muzzle; convulsive twitchings around the mouth and muzzle; abundant salivation, or dryness of the mouth, with intense thirst; the teeth loose; the tongue swollen, immovable, and often protruding and livid, or even black; convulsive movements, and closing of the throat, so as to render swallowing impossible,—swallowing of liquids in particular, which return through the nostrils; the throat swollen and dry, and often of a purplish hue.

In respect of the Appetite.—Total absence of appetite, and intense thirst; determined aversion to all food, or especially to the natural food, sometimes with appetite for filthy and unnatural things, or gulping of nauseous and unnatural substances.

In respect of the Digestive Functions Generally.—Vomiting, with convulsive torsions; ejection of strange and unnatural substances (such as straw, wool, rags, &c., &c., or even of excremental matter), or even of thick black blood in the vomits (of dogs).

In respect of the Head.—Fits of giddiness as soon as an erect position is assumed, with whirling, reeling, and headlong fall.

In respect of the Excrements.—Dry, lumpy, hard (generally very dark) and most offensive evacuations; spontaneous evacuations; discharge of froth or foam in the place of excrement.

In respect of the Urine.—Total *suspension* of discharge; or insufficient emission of dark and even bloody urine, or discharge of blood with or without urine.

In respect of the Organs of Generation.—Unnatural heat.

In respect of the Respiratory Apparatus.—Cough in attempting to swallow; hoarse, roaring, snorting, impeded, thick and oppressed respiration; interrupted respiration; intermitting of breathing, or suspension of breath. Respiration very slow, thick and laborious, with irregular and semi-convulsive heaving of the flanks.

In respect of the Extremities.—Paralysis of the legs, and especially of the hind legs and quarters, evinced by these being dragged behind it by the

animal, in which there is total want of muscular power in those parts.
dinous jerkings and twitchings; sudden and convulsive movements o
muscles and tendons, and contortion of the limbs; swelling of the veins, n
ness of the legs and feet, or trembling of the limbs.

Summary.—Staggers, or a comatose, drowsy state. Constipation. I
sibility of the nervous system. Locked-jaw. Backward bending of the h
Attacks of staggering, threatening apoplexy. Dull, stupid, sleepy look.
horse hangs down his head, or leans on the manger. Heat in the h
Strong pulsation in the bloodvessels about the head. Pulse slow and
Eyes fixed; pupils dilated. Breathing slow, apparently obstructed. Jer
and convulsive movements in the limbs. Constipation, or black evacuati
which are very offensive. Urine difficult to pass, or retained.

PETROLEUM.

CHARACTERISTIC SYMPTOMS.

In respect of the Extremities.—The animal throws all its weight u
the left side in standing. The feet in general are cold, but there is a cha
teristic and burning heat of the soles of the feet, particularly about the heel
in the hollow parts between the frog and the crust; enlargement of the h
and swelling of the soles of the feet,—which, upon close examination, or u
the removal of superfluous excrescences, will exhibit red or bluish spots
patches. Cracking sound of the joints upon first moving, particularly we
ness, trembling, swelling, or overhanging of the knee or hock; irregular cu
ature of the joints; paralytic affections (evinced by oscillation and giving w
of the joints).

In respect of the Respiratory Apparatus.—Dry, hoarse, or suffo
tive cough at night; gurgling or rattling sound emitted from the air-passag
the breathing becomes impeded and difficult in the open air; breath v
offensive. Herbaceous smell, or such as that emanating from heated (
menting) vegetable matter.

In respect of the Excrements.—Evacuations are lumpy, hard, scan
and voided with considerable effort. The presence of worms (especially lu
bricus) in the evacuations; or great relaxation and very frequent evacuati
during the day. Phlegm and blood mingled with the excrements; sudd
attacks of diarrhœa towards the latter part of the night. Offensive emissi
of flatulency after the bowels have been freely discharged, and constant bu
bling in the intestines during the continuance of the diarrhœa.

In respect of the Movements and Position.—Repugnance to risi
in the morning, and great inclination to lie down at night. Striking at t
belly with the feet, or drawing the legs up close to the body. Sometimes gr
uneasiness, and great inclination to be continually rolling,—at the same ti
gathering the legs up, or crouching in a huddled position, or lying as clos
coiled together as possible.

In respect of the Pulse.—Generally full, but sometimes becoming sm
and wiry.

In respect of the Skin and External Surface.—Flushes of he
or general heat, particularly at night; heat with sweating at night. Tenden

of the skin to crack, especially in the folds adjoining joints, beneath or within the joints, and in parts which are occasionally in contact. Red and brown, or bluish spots and patches upon the skin. Excoriation, roughness, or scabbiness of the skin, which separates or inverts the hair, or which scatters it in different directions. The surface of the skin is very tender, and the skin generally flabby and unwholesome.

In respect of the Appetite.—Morbid increase of appetite, sometimes amounting to voracity, with imperfect mastication, and preference for succulent and unwholesome food, which almost invariably *sets the teeth on edge*, and renders the animal incapable of masticating dry food, such as chaff, grain, hay, &c., when he will be observed to eat the latter, if at all, in a peculiar snapping manner; using the lips and incisors only, and avoiding mastication with the molars; eating, followed by drowsiness or irritability and uneasiness; violent thirst from time to time.

In respect of the Mouth, Teeth, Throat, &c.—Herbaceous smell of the mouth. Accumulation of phlegm in the mouth and throat, or the mouth very dry. White coating on the tongue.

PHOSPHORUS.

CHARACTERISTIC SYMPTOMS.

In respect of the Pulse.—Full and hard; hurried, small, and wiry, or slow and feeble.

In respect of the Milk.—Milk stained or tinged with blood, with general inflammatory symptoms; or milk of an unnatural flavor, *bitterish*, scanty, and difficult in the milking.

In respect of the Skin and External Surface.—Dry scaling off of the scarf-skin; progressive or periodical decidence of the hair or wool; bare patches about the head; vesicular eruptions depositing dry scabs, and leaving a fish-skin roughness or scaliness. Insignificant wounds have a tendency to prolonged and copious bleeding. Yellow or brownish spots or patches upon the skin; morning sweats; hectic fever symptoms; increased development of heat at night, and cold extremities. Rough, gloomy, and staring coat; the hair actually stands on end, or is lank and weak.

In respect of the Respiratory Apparatus.—Catarrhal cough; hoarse and husky cough; internal cough. Continual dry cough, or dry cough especially in the daytime, in the open air, or during the prevalence of cold dry wind; pressure of the throat, gullet, or chest externally provokes coughing; rapid succession of inspiration and expiration; short, accelerated, and laborious breathing, aggravated by motion; equality of interval between the inspirations and expirations; or else, and more frequently respiration effected by a double effort (as in broken wind); wheezing respiration, even during rest; or peculiar whistling sound attending the respiration, especially after rapid motion up an ascending inclination.

In respect of the Excrements.—Continued and papescent looseness of the evacuations, attended with progressive loss of strength; diarrhœa, in which phlegm and blood are predominant. Sometimes these symptoms are preceded by costiveness, with very slow, difficult, and peculiarly dry evacuations.

In respect of the Urine.—Profuse discharge of colorless urine ; c terrupted discharge of thick, turgid, reddish urine.

In respect of the Organs of Generation.—Increased susceptibili the sexual instinct attending the gradual and progressive atony and del of every other organ. The animal is continually in heat, even during p nancy, or after copulation. Impregnation, generally leading to prematur fruitless labor. The symptoms appear to be allayed, or suspended for a t by parturition.

In respect of the Muzzle, Mouth, Throat, Nose, &c.—The m is intensely dry, the muzzle being dry, hot, and fissured. Puckering or sl elling of the skin throughout the mouth, like that produced by continued s ration of the hands with hot ash-water. Dryness and whiteness of the ton soreness of the mouth, with accumulation of adhesive phlegm, or dry, wl frothy saliva ; the throat dry, and the tonsils swollen. Snorting, with charge of watery or thick yellow and purulent matter from the nost Snorting, with expulsion of blood, or blood mingled with phlegm or mat tenderness, redness, and heat of the nose, or dry and scabby concretions in nostrils ; offensive odor from the nose, or sneezing. Great deterioration of sc

In respect of the Eyes.—Yellowish or faint yellow color of the sclero and conjunctiva ; the eyelids are swollen, and the animal appears to su when opening them, so that they are quickly closed again ; or there is contin blinking and profuse watering of the eyes, aggravated by motion, especi against the wind ; affections incidental to inflammation ; redness of the c junctiva ; turgid swelling of the glands at the corners of the eye, or red of the glands. Squeezing closure of the eyes.

In respect of the Extremities.—Insensibility of the extremities, sw ing of the legs and feet ; dry, harsh, rough, and cracking skin on the tremities generally ; contractions, swelling, and stiffness of the joints, or bility with oscillation ; swelling of the knees and hocks, with local heat ; extremities, generally, are very cold, and the skin is cast off, the hair falli or being easily rubbed off.

Summary.—Cough continual, dry ; tormenting cough. Breathing diffic short, rapid ; rendered worse by motion ; profuse sweat. Coat rough and d looking ; it loses all gloss. The coat drops, or rubs off in patches. Mouth h dry. General weakness. Desire to get away from the open air. Evacuati generally loose. Urine thick. Pulse soft, rather quick ; sometimes feel General condition of the animal depressed.

PHOSPHORI ACIDUM.

Characteristic Symptoms.

In respect of the Extremities.—Lameness, without apparent caus limping progressively worse ; the feet hot and very tender to the touch ; mo or less separation of the hoof from the coronet ; the formation of ulcers abou the coronet and the fleshy parts of the feet, attended with an offensive bu thin discharge ; granulating ulcers, with proud flesh, and bluish appearance falling off of the hoofs,—*softening of the horn ;* the crust becomes too long, an the superabundant parts are irregularly broken; deepseated and spreading, corroding ulceration of the feet; the inner side of the pastern joints very sore, and exhibiting rawness, with more or less proud flesh; the space between the hoofs swollen and inflamed; separation of the toes by the ulcerative process, the toes being parted as far as the biflex canal; inflammation of the sensible parts of the hoof; inflammation of the biflex canal, with enlargement and stiffness of the adjacent parts. Discharge of oily, fatty adhesive matter over the forepart of the feet. Concretions of matter with dirt. Accumulation of thick matter about the hoofs.

In respect of the Skin, and External Surface.—Puffy bloatedness, often with the appearance of fattening (at first), accompanied with and characterized, however, by a peculiar indifference, dulness, and languor; puffiness, succeeded by rapid emaciation, flaccid and flabby skin; the development of blackish, brown, or yellowish spots or patches upon the skin, with decidence of the hair or wool in patches; crackling sound upon the pressure of the flanks, and of the surface generally; watery and waving tumors in various parts.

In respect of the Muzzle, Mouth, Tongue, Nose, &c.—The membranes of the mouth, nostrils, eyes, &c., discolored,—pale or yellowish, or even of a dusky gray or blackish color. Yellowness, dryness, or brownish, stained and ulcerated muzzle; the tongue stained brownish or yellowish. Degenerating into livid or leaden color, Yellowish color of the teeth degenerating into blackness. Swollen, detached, and bleeding gums. Dryness of the mouth, or accumulation of adhesive phlegm; incrustations on the nose, and in the nostrils.

In respect of the Eyes.—Dilated pupils; the vessels of the corner of the eye filled with yellowish matter; yellowness of the caruncle (gland at the corner of the eye), sometimes followed by inflammatory redness. The eyes sunken and hollow, the conjunctiva injected; the eyes dull and heavy. Downcast look; the caruncle becomes enlarged, with increasing redness.

In respect of the Appetite.—Gradual deterioration and decrease, with increase of thirst; intense and continual thirst.

In respect of Rumination.—Suspended.

In respect of the Excrements.—At first costiveness, with hard evacuations, succeeded by very loose evacuations, with undigested food; continued and *unmitigated* looseness; slimy, (very loose) serous evacuations; papescent and spontaneous discharges; blackish, liquid, fetid, and even putrid discharges.

In respect of the Urine.—Profuse and colliquative, and frequent discharges, of clear and watery urine; or urine of a milky or creamy character. Weakness of the limbs.

In respect of the Movements and Position.—Dulness, indifference, lassitude; aversion to motion; constant recumbency.

In respect of the Pulse.—Intermittent and irregular. (Consult, moreover, the foregoing article on Phosphorus.)

PHYTOLACCA DECANDRA.

CHARACTERISTIC SYMPTOMS.

In respect of the Muscular System.—Rheumatism of the mu of the chest, abdomen, and back. Periosteal rheumatism. Rheumatism enlargement of the glands; chronic rheumatism, worse in damp weat rheumatism of the fibrous tissues covering the bones and nerves.

In respect of the Glands.—Swelling and induration of the glands.

In respect of the Eyes.—Flow of tears; catarrhal or rheumati flammation of the eyes. Granular inflammation of the lids. Vertigo; ness of vision.

In respect of the Nose.—Coryza; flow of mucus from one nostri the other. Indicated in acute and chronic nasal catarrhs; and in old badly smelling discharges from the nose.

In respect of the Mouth and Throat.—Tenderness and heat on roof of the mouth, and on the tongue; profuse secretion of saliva. Ro ness, dryness, soreness in the throat. Congestion and inflammation of back part of the mouth and fauces. Diphtheritic inflammation and ulcera of the throat. Fauces covered with a dark-colored, false membrane. Br excessively offensive.

In respect of the Appetite.—Raging appetite. Hungry soon eating.

In respect of the Stomach and Bowels.—Vomiting of food. M wind in the stomach and bowels. Fetid flatus is discharged. Rumbling the bowels. Diarrhœa, especially in the morning; stool soft, dark, with digested food.

In respect of the Urine.—Dark-red urine, which stains the vessel. *buminous* urine. Increased quantity of urine.

In respect of the Generative Organs.—Leucorrhœa. Flow of bl from the womb. *Inflammation*, *swelling*, *induration*, and *suppuration of bag* (or udder) of cows and other animals (of the mammæ in the human s ject). For the garget, so-called, or induration of the cow's bag, the Phytola has long been a popular remedy in this country (America), and almost equa unknown in Great Britain. Given in season it will entirely remove the wh difficulty, and prevent suppuration of the udder ("gathered breast" in wome On this account in some sections of the country it goes by the name of garg

PLATINA.

CHARACTERISTIC SYMPTOMS.

In respect of the Pulse.—Small, wiry, and intermittent.

In respect of the Organs of Generation.—Excessive and continu heat; intense susceptibility of the sexual instinct; throes attending labor an abortion; excessively violent discharge of blood from the womb; discharge bright red or dark blood, but not of clots; diminished or suspended motions of the fœtus; shining, red, or yellow discharge from the bearing; swelling or protrusion, with forcing movement in the bearing; difficult, convulsive, and long-continuing labor, without remission of the throes; intense violence of the throes, ending in the downfall of the calf-bag (or inversion of the womb), which hangs out from the bearing, and is either characterized by intense redness or by a purplish hue.

In respect of the Milk.—Sometimes diminished, or even dried up; or natural and healthy.

In respect of the Movement and Position.—Great uneasiness; constant change of position—now lying, now standing; when standing, the animal rests its head upon the manger; or if lying down, the head is stretched upon the flank; more than usual length of time for recumbency, or standing longer than usual, sometimes perfectly motionless; sometimes pawing the ground, or even leaping convulsively.

In respect of the Breathing.—Laborious, interrupted, and convulsive; with panting, violent, and noisy expiration; heaving of the flanks, and moaning or bellowing; rapid succession of inspiration and expiration.

In respect of the Skin and External Surface.—Lankness and hollowness of the loins, with enlargement and drooping of the belly.

In respect of the Appetite and Rumination.—Disinclination to eat, total loss of appetite, increased thirst, or absence of thirst, and *suspended rumination.*

In respect of the Muzzle, Mouth, Throat, Tongue, Nose, &c.—More or less dryness (with or without heat) of the muzzle; dryness and cracking of the lips and muzzle; the gums fissured; the throat hot and dry; dryness, heat, and stoppage of one nostril; convulsive yawning.

In respect of the Eyes.—Convulsive trembling or twitching of the eyelids; the eyes prominent or convulsed, the pupils moderately dilated or contracted.

In respect of the Excrements.—Violent effort in the expulsion of hard, small, detached, and insufficient evacuations; frequent piecemeal evacuations; obstinate looseness.

In respect of the Urine.—Red and scanty; very frequent emission in small quantities, but with a perfect stream.

In respect of the Extremities.—Lassitude (with disposition to relieve them), and sometimes torpidity.

PODOPHYLLUM PELTATUM (May Apple).

CHARACTERISTIC SYMPTOMS.

Perspiration of the head; vertigo while standing; inclination to fall forwards. Heaviness of the eyes, with heat and throbbing of the temporal arteries. Grinding of the teeth at night; mucus on the teeth. Appetite voracious, satiated with but little food. Diarrhœa immediately after eating or drinking. Thirst towards evening, and during fever. Vomiting of food soon after a meal; followed by uneasiness after food. Colic, with retraction of the abdominal muscles, commencing at daybreak. Prolapse of the bowel. L of strength after an evacuation. Constipation, with flatulence. Morni diarrhœa, with natural stool in the evening; evacuations of dark yell mucus. Weakness and stiffness of the knees. Coat soft, flabby, with mo ture; the symptoms are worse in the morning, better in the evening.

Used also for jaundice and congestion of the liver.

PULSATILLA NIGRICANS.

Characteristic Symptoms.

In respect of the Pulse.—Accelerated, strong, full, and soft; or slo full, and soft; quick, small, and wiry pulse; feeble and barely perceptil pulse; *hurried pulse;* pulse sluggish, or sluggish and yielding; sometimes al slow and continuous, or impeded and struggling.

In respect of the Milk.—Bluish appearance of the milk.

In respect of the Movements.—Constant desire to lie down, or res less and uneasy movements occasionally; sluggish and heavy movement drooping appearance; arching of the back; crouching in corners, avoidi light, noise, or the presence of other animals; tottering, stumbling, oscilla ing, and uncertain pace.

In respect of the Skin and External Surface.—General bloatedne of the body, dropsical swellings, falling off of the hair, displaying the gener development of incrustations of a bluish-white color, over the skin about th muzzle and mouth chiefly; eruption of small whitish pustules, chiefly or onl about the mouth and muzzle; whitish oozing pustules, similarly, and whic in drying leave a whitish mealy crust; violent itching and constant scratc ing, or rubbing of the nose against the legs or on the manger, &c., attendin the scaling off of the mealy crust, which is quickly replaced by new and sim lar incrustations; shivering, with coldness towards evening; coldness an torpor of one side; heat and dryness, or partial sweats at night; heat, fo lowed by profuse sweating; periodical flushes of heat and sweating; colliqu tive and offensive sweats; sweats, whether partial or general, predominatin at night.

In respect of the Appetite.—Generally want of appetite, with invinc ble repugnance to food; sometimes fitful and voracious appetite, followed b frequent and considerable emission of wind, and by inflation and distension the belly after eating; absence of thirst, alternated with intense desire fo fluids, cold water in particular.

In respect of the Muzzle, Mouth, Throat, Nose, &c.—Eruption o whitish and small pustules about the muzzle, mouth, &c., as already describe in speaking of the "skin and external surface;" milk-crust of calves; puff swelling of the muzzle and lips; dryness and heat of the muzzle; puffed an bluish swellings, with casting of the skin, or scaling off of scabs from the skin or great tenderness of the muzzle, nose, and lips; the teeth loose; thick, yel lowish, or ashy coating on the tongue; mouth open, with protruding tongue insensibility of the tongue as regards the touch; adhesive and abundan phlegm in the mouth; profusion of watery salivation; putrid smell of th mouth, and, almost invariably, great dryness of the mouth when fasting; inflammation of the throat, with dark hue, and distension of the vessels; the tonsils and the back parts of the palate are swollen and inflamed, and the inflamed parts, generally, are covered with thick, white, glutinous, and adhesive phlegm; fetid, thick, yellowish-greenish discharge from the nose, or stoppage of the nostrils, or of one nostril, with discharge of blood; the nostrils are ulcerated; stoppage and dry heat of the nostrils, or of one nostril; *great deterioration of scent;* the nose generally swollen.

In respect of the Head.—Reeling giddiness, without precipitate falling; wheeling and oscillation, with uncertain and wavering pace, occasioned by heaviness and whirling of the head.

In respect of the General Bearing and Condition.—The animal secludes itself, crouches and coils itself up, and remains in a heavy, drowsy, lethargic state, with, however, constant moaning, occasional trembling, and frequent uneasy movements; the muzzle buried beneath the flank, but frequently raised to yawn, when wakeful; wakefulness is accompanied with slow, uneasy movements, and anxious whining, but without change of position, and with constant return to the characteristic drowsiness.

In respect of the Eyes.—The eyelids are red and swollen; the margins of the eyelids, in particular, are inflamed, the inflammation sometimes extending to the whole of the inner surface of the lid, and involving the eye itself, with redness of the conjunctiva, and swelling and redness of the caruncle; staring appearance of the eyes after parturition; the eyes and eyelids are dry, or there is profuse watering of the eyes, or abundant secretion of thick, yellow, adhesive matter, forming into strings about the corners of the eye; the pupils are in general contracted, but sometimes, also, there is alternated dilatation with contraction of the pupils; red pimples on the margins of the eyelids, rising to a yellow head, charged with thick, stringy matter, or the development of peculiar pustulous elevations in the corners of the eyes.

In respect of the Ears.—Redness, heat, and inflammatory swelling of the ears, with deficiency of ear-wax; accumulation of thick, yellow matter, and *obtuseness of hearing.*

In respect of the Digestive Functions Generally.—Vomiting of phlegm, food, bilious, and acrid matter; vomiting of blood, excessive tenderness of the belly to the touch, evinced by the animal shrinking from, or cautiously avoiding contact, and casting round the head with an expression of pain, upon the application of the hand to those parts; vomits, attended with violent shivering, and generally occurring after eating or drinking, but more frequently the latter.

In respect of the Excrements.—Sometimes costiveness, but more frequently, or secondarily, frequent, very loose, liquid, watery, bilious, frothy, bloody evacuations; or evacuations mingled with bubbling phlegm.

In respect of the Urine.—Spontaneous drop discharge, or very copious and frequent discharge of clear, pale, watery urine; or else scanty discharge of dark, sometimes reddish urine; frothy urine, or urine mingled with phlegm; emission of urine in an interrupted stream.

In respect of the Organs of Generation.—Heat and swelling of the [illegible]: before, during, or after parturition, discharges of blood from the [illegible] of black, clotted blood, or of blood mingled with jelly-like globes, or with the admixture resembling the raw white of an egg; swelling of the udder; heat, and excessive tenderness of the udder; the teats, one by one, become swollen, hard, knotty, and very tender, with the development of hard tumors in the teats.

In respect of the Respiratory Organs.—Frequent and panting respiration, with heaving of the flanks, and violent, full, bounding palpitation of the heart; or slow, languid, impeded, and laborious breathing; or short and impeded respiration; catarrhal cough, shaking cough, or cough which seems to disturb the whole frame; cough which provokes retching, or even vomiting, or which terminates in a violent gasp, and with the utmost stretching forward of the neck and muzzle (horizontally), as if to relieve some choking obstruction of the throat; thick, yellow matter, ejected in coughing.

In respect of the Extremities.—Swelling of the legs, or of the coronet only, or of the coronet and the circumference just above the knee or hock; dropsical swelling of the legs and feet, or inflammatory swellings, with great increase of superficial heat; enlargement of the veins of the legs; internal tenderness of the legs and feet, evinced by the animal shrinking only upon *severe pressure;* trembling, tottering, and giving way of the joints; weak, languid, indolent, and shuffling motion of the feet; swelling of the soles of the feet, so as to destroy the concave retrocession of the sole, and to depress the surface to the level of the crust.

Summary.—Affections of mucous membranes. Catarrh; common cold. Indigestion. Gastritis: inflammation of the stomach. Appetite generally lost. May be voracious. Mouth and lips swollen; puffy. Eyelids inflamed, red, and swollen. Eyes red; conjunctiva inflamed and engorged. Profuse flow from the eyes; watery secretion. Nostrils ulcerated; constant discharge of yellow or greenish pus. Troublesome, shaking cough; worse towards night. Inflammation and dropsical swelling of the legs and feet. Evacuations loose, frothy.

Pulsatilla has been found useful during the period of parturition in animals; also for abortion; and, with Belladonna, in inflammation of the udder.

RHUS TOXICODENDRON.

CHARACTERISTIC SYMPTOMS.

In respect of the Pulse.—Slow, heavy, irregular, impeded, and tremulous pulse.

In respect of the Extremities.—Paralytic insensibility, and coldness of the limbs; inflammatory local swellings in joints, and adjacent parts, especially affecting the tendons, ligaments, and muscles, as distinguishable by following the course of the tendinous continuations springing from the affected part, or connected with it, when the parts which are in the course of such tendons, &c., will be very tender to the touch throughout, whereas adjacent parts will sustain pressure without shrinking; stiffness and weakness of the limbs, especially of muscular parts, exhibited on proceeding to move, or by yielding and failing during motion, and extreme tremulation of such parts after every effort or exertion, however trifling; paralytic incapacitation of the legs and feet; local swellings, with stiffness on first moving, modified by movement, but considerably aggravated after it, and in rest; affections of joints and sinews, which cause a peculiar catching, snatching lameness, on first moving; swellings, with stiffness of the joints and sinewy parts, causing particular tenderness of grounding the feet when in motion; affections of the same kind, attended with a short, broken, irregular, interrupted, and limping pace; the hock, knee, pastern, and fetlock joints are particularly affected; oscillating on the inner side of the hock; overhanging of the knee; hard swellings, which convey the idea of elasticity (like india-rubber to the touch); tendinous, and other contractions.

In respect of the Skin and External Surface.—Vesicular eruptions of various kinds; vesicular eruptions terminating in scabious incrustations, and in desquamations, involving decidence of the hair; periodical heats and chills; chills succeeded by heat, worse at night; evanescent flushes of heat, with sweating of the belly; continual sweating, or sweating in the morning.

In respect of the Head.—Reeling and staggering giddiness.

In respect of the Appetite.—Craving and irregular; aversion to food, with more or less intense thirst.

In respect of Rumination.—Either natural (healthy), or totally suspended.

In respect of the Excrements.—In the early stage, almost invariably costiveness, or alternate costiveness and looseness; or subsequently, in the majority of cases, very great relaxation of the bowels, with discharge of bloody, frothy, *mingled red and yellow*, or ash-colored, or creamy and white evacuations.

In respect of the Urine.—Continual and very frequent and abundant discharge of urine, or even spontaneous emission; dark, turbid urine, whitish and turbid urine; diminished discharge; drop discharges; pale, watery urine, leaving a white deposit.

In respect of the Stomach and Intestines.—Bloated or flatulent puffing of the belly.

In respect of the Eyes.—The eyes, and enveloping membranes, are red and swollen; watery swelling around the eyes; gloomy, inanimate eye; excessive discharge of water from the eyes; the lids are swollen; the eyes and eyelids both inflamed; excessive, vivid redness, or brownish, turgid appearance of the eyes, and contiguous vessels.

In respect of the Muzzle, Mouth, Tongue, Throat, Neck, &c.—Discoloration of the muzzle; brown-red stains, or vesicular eruptions on the muzzle; muzzle dry and hot; pimples on the parts adjacent to the mouth, nostrils, muzzle, &c.; peeling of the skin, or casting of scaly supercrescences; dryness of the nose, with sneezing, or violent snorting, and considerable discharge of peculiar colored matter, or of gelatinous phlegm from the nostrils; swellings and induration of the glands of the nether jaw; dry, and brownish-reddish, or yellowish lips; foul smell emanating from the teeth; dislodgment of the teeth, and excessive tenderness of the teeth to pressure, however slight; jarring of the teeth, and tenderness of the gums, as evinced by the peculiar snatching method of mastication, and by the avoidance of hard, dry food, how great soever be the inclination of the animal to eat it, as evinced by the eagerness with which it is at first seized; the dog collects bones, but, *after attempting to crack them, merely licks them;* dryness of the mouth, attended with intense thirst, or accumulation and drivelling of yellowish or reddish saliva; v profuse secretion of saliva; tenacious phlegm in the mouth, which, when mouth is opened, appears to adhere from the upper to the lower jaw in threa or thin semi-transparent membranes; the tongue is dry and dusky; inter swelling of the throat, with gulping, straining, and difficult deglutition of substances, but no impediment to the swallowing of soft and moist food.

Summary.—Strains; sprains. Affections of the tendons, ligaments, a synovial membranes. Diseases of joints. Rheumatism. Paralysis. Dislo tions. Drawing, tearing pains, increased during rest, relieved by moti Hot swelling of a part, which is very tender to pressure. Drawing pai especially in the limbs. Swelling of the legs and feet; tenderness and swell of the joints. Stiffness and rigidity in the back. Pain and tenderness acr the loins, or injury to the loins from drawing too great a weight; overstraini a part. Wounded and inflamed tendons. Diseases of the periosteum. Spa and ringbone. Pustular and scabby eruptions. Erysipelatous inflammatio Swelling of the eyelids and the adjacent parts. Inflammation and swelli of the glands, especially those under the jaw. Restlessness, lying down a getting up. Shivering and shaking on going into the open air. Profuse sw breaks out on very little exercise. Staggering gait; appears likely to fall dov The animal is excessively weak.

RUTA GRAVEOLENS.

CHARACTERISTIC SYMPTOMS.

In respect of the Extremities.—Paralytic stiffness of the paster swelling of the veins of the legs; rigidity of the coronet and hoof; yieldi and oscillation of the thighs, the animal falling upon its haunches; the anim is unable to stand without trembling or oscillation; sudden and unaccou able limping, with yielding and shrinking of the lamed limb; softening of t bones of the legs; dislocation of joints; swelling, induration, and perman tenderness of the pastern and coronet; injuries of the coffin-bone, as if oc sioned by a sprain; enlargements, and permanent induration of the coatin of the bone; paralysis of the hind-legs and quarters in particular, with tra ing of those parts, but incapability of rising, or standing upon them.

In respect of the Respiratory Organs.—Shortness and difficulty breathing, attended with palpitation of the heart; interrupted and irregul breathing; temporary suspension of respiration; intermittent respiratio with irregular pulsation of the heart.

In respect of the Organs of Generation.—Incapability of reta ing the fœtus, or even expulsion of the ovum; imperfect and unproducti pregnancy; habitual slinking.

In respect of the Eyes.—Rheumatic weakness of them.

SABINA.

CHARACTERISTIC SYMPTOMS.

In respect of the Organs of Generation.—Nymphomania, of mares; excessive increase and susceptibility of the sexual instinct; frequent, but imperfect and unproductive copulation; continual swelling, redness, and irritation of the bearing; swelling, distension, and tenderness of the udder; discharge of a red or yellowish glairy fluid from the bearing; discharges of bright-red or clotted blood from the bearing; floodings; weakening or cessation of the motions of the fœtus; regular succession of forcing at the bearing, evinced by alternate dilatation and contraction, with a peculiar shooting effort; inversion of the womb (downfall of the calf-bag); false appearances of abortion; constant predisposition to abortion; endemic or epidemic prevalence of abortion; inflammation of the womb, with violent after-pains, and forcing.

In respect of the Urine.—Increased frequency, often with scantiness of emission; retention of urine, or drop discharge; continual urging to stale, but without emission, or with scanty emission; discharge of blood, or of urine mixed with blood.

In respect of the Movements and Position.—Longer continuation of recumbency, or the like of motionless, erect posture, or else great uneasiness, with alternate lying down and getting up, in quick succession; or getting up with a sudden and violent spring; the head, during erect position, rests on the manger, or upon some other level and horizontal object; or, during recumbency, upon the flank.

In respect of the Respiratory Organs.—Accelerated, and often convulsed respiration; heavy, noisy breathing, with heaving of the flanks.

In respect of the Eyes.—Dull, heavy, downward look,—or staring look.

In respect of the Excrements.—Alternate hardness and softness of the evacuations; discharge of blood following a hard evacuation; soft and very relaxed evacuations.

In respect of the Stomach, &c.—Drooping of the stomach, with downward distension, and hollowness of the flanks; extreme distension of the belly with flatulency, relieved by violent expulsion of wind attending the evacuations.

In respect of the Head.—Reeling giddiness.

This remedy is very useful to prevent miscarriage, and discharge of blood from the womb.

SARSAPARILLA.

CHARACTERISTIC SYMPTOMS.

In respect of the Urinary Organs.—Frequent desire to urinate, with scanty emission. Straining in the bladder. Pale copious urine; slimy, flaky, clayey, sandy urine. Gravel in the urine. Obstinate constipation with urging to urinate. Rheumatic affections with decrease in the urine.

This remedy is used, sometimes in alternation with Lycopodium, to facil tate the passage of calculi from the kidneys or bladder. Ulcers from abus of mercury. Copious mucous leucorrhœa.

SECALE CORNUTUM.

CHARACTERISTIC SYMPTOMS.

In respect of the Pulse.—Hurried pulse; full and accelerated pulse small, slow, imperceptible or irregular pulse; or a pulse partaking of any combination of these characteristics.

In respect of the Skin and External Surface.—Great roughness an dryness of the skin; the skin insensible; severe pressure causes no flinching local, black, and very decomposed sores; sores which end in complete mortification; gangrene (particularly of the mouth and genital parts); bloody, pustular, and vesicular eruptions, which terminate in utter decomposition; dryness and heat of the skin (when the pulse is hurried, small, and wiry), or cold clammy, and copious sweating, with a feeble, retarded, and imperceptibl pulse; the belly is intensely cold; coldness extending to the back and to th limbs, but unattended with shivering; rapid decidence of the hair or wool and casting of the skin.

In respect of the Organs of Generation.—Gangrene of the bearing black gangrenous swelling of the bearing; excessively convulsive throes, wit difficult labor; continued violence of the throes, without the expulsion of th fœtus; violent expulsion of the fœtus, with a convulsive effort, and inversio of the womb; the womb, on protruding, has a deep violet color; the vagin and bearing have a deep violet color; intermittency or feebleness of th throes, or total suppression of the throes, with inanition, and with total cessation of the fœtal motions; sudden diminution and drying up of the milk a an advanced period of pregnancy; *profuse discharge of very black and liqui blood from the womb;* or discharge of blood, provoked by the least exertion excessive and too long-lasting and fetid discharges of blood after parturition.

In respect of the Movements and Position.—Disposition to continue unusually long motionless, and in one position, whether erect or recumbent, with dull and depressed appearance; disposition to lethargic tranquillity or sudden fits of restless agitation, with scratching or pawing of the ground and unaccountable leaping or plunging; very intense weakness, and total inability to remain erect.

In respect of the Excrements.—First, costiveness, without evacuation; suppression of evacuations, followed by profuse, liquid, frequent, slimy dark, or even black and bloody, evacuations; spontaneous discharge; evacuations containing worms of various kinds; excessive relaxation, attended wit sudden debility.

In respect of the Urine.—Retention, or drop discharge; or abundan and frequent discharge of very pale urine, or of whitish, chalky-looking urine

In respect of the Respiratory Apparatus.—Impeded and interrupte respiration; or quick panting, and difficult breathing, with violent palpita tion of the heart; or slow and laborious breathing, with thick blending, and slow and irregular pulsations of the heart.

In respect of the Eyes.—The eyes hollow, sunken, and cadaverous, with dull or savage look; downcast or convulsed, and fixed; the pupils either intensely contracted or dilated; sometimes apparent unconsciousness or insensibility of sight.

In respect of the Muzzle, Mouth, Throat, Nose, &c.—Discoloration of the muzzle; the muzzle dry; sometimes very hot, or dry without great heat; distension of the jaws, and convulsive action of the muscles about the mouth; the teeth are loose, and often dislodged; grinding of the teeth; discharges of blood from the nose; great dryness of the mouth, tongue, and throat; foaming at the mouth; bloodstained or greenish foam; swelling of the tongue.

In respect of the Appetite and Stomach.—Intense and unquenchable thirst; repugnance to all kinds of food; vomitings of undigested yellowish or bilious matter; slimy vomiting; vomiting of perfectly black, bilious, and bloody matter, which is quite liquid, or sometimes lumpy.

In respect of the Extremities.—Dropsical swelling of the legs and feet; complete gangrene, characterizing the development of sores on the legs, &c.; distortion of the limbs and joints.

S. cornutum acts powerfully on the uterus; important to prevent abortion.

SEPIA.

CHARACTERISTIC SYMPTOMS.

In respect of the Pulse.—Full, or full and accelerated pulse.

In respect of the Organs of Generation.—Soreness and excoriation of the bearing, extending between the thighs to the udder; tenderness of the udder generally, and soreness of the teats in particular; copious and excessive perspiration about the genital parts; oozing eruptions in, and corrosive discharges from, the bearing; inversion of the womb; excessive throes and continued forcing after parturition; violent discharges of blood after parturition.

In respect of the Respiratory Apparatus.—Short, oppressed, and difficult breathing; discoloration or development of patches on the hair or skin of the chest, with irregular, fitful, intermittent, or bounding pulsations of the heart; moist, husky, or gurgling cough; dry cough, with arching of the back, and drawing up of the stomach; cough, with excessive tenderness of the chest upon pressure; cough, provoked by the slightest pressure on the chest or throat.

In respect of the Skin and External Surface.—General perspiration at night, or cold sweats at night; sweating, which comes on unaccountably, during rest; or colliquative sweats as soon as motion or exertion commences, continuing, also, long after the exertion has ceased, and becoming still more profuse within doors, in the stable, &c., after labor in the open air; heat of the head and roots of the horns, &c., with coldness of the extremities, and sometimes of the quarters; general deficiency of heat; extraordinary tenderness of the whole body to the touch; the animal shrinks from contact in any part; knotty protuberances and excrescences; eruption of white blisters or bladders on the skin; patchy discolorations of the skin and hair; hard or suppurative swelling of the glands; *passive ulceration;* slow, stubborn, indolent, vesicular eruptions, with or without incrustation of scabs.

In respect of the Gait, Movements, and Position.—Dejected appearance; drooping; excessive startling at the slightest noise, or every time the animal is approached; the animal seems to be afraid of those who are in the constant habit of attending upon it and feeding it; the animal becomes tired, slow, and evidently exhausted, dragging the limbs languidly along, and prone to slacken pace, or to stop altogether, after any little exertion; inclination to continue drowsy during the day, and to become restless and agitated at night; quailing, tottering, vacillating, and uncertain step.

In respect of the Appetite.—Voracious hunger, quickly satiated, and followed by great uneasiness; or repugnance to all food, and absence of appetite; sometimes absence of thirst during the sweating, and at other times excessive and intolerable thirst night and morning.

In respect of the Digestive Functions Generally.—Bilious vomitings, or vomiting of hard, lumpy food; pulsation perceptible externally in the pit of the stomach; doubling up of the body, indicative of colicky pains.

In respect of the Excrements.—Expulsion of wind and phlegm only, with violent urging to evacuate; evacuations passing slowly, but suddenly effected by the discharge of small, detached lumps, with considerable mucous or slimy fluid; evacuations mingled with matter like the raw white of an egg; putrid, acid-smelling, or frothy, and sometimes bloody, diarrhœa; protrusion of the intestine.

In respect of the Urine.—Discharge of urine, which, upon settling, develops a coagulation of blood heavier than the aqueous fluid; sometimes copious discharge, with fetid urine; but more frequently suppressed urination, with continual and ineffectual urging or scanty discharge of dark reddish, or sandy-looking urine.

In respect of the Eyes.—Inflammatory redness, and swelling of the eyelids; redness, swelling, and soreness of the whole interior surface of the eyelids; inflammation, with ulceration of the eyelids; inflammatory redness of the sclerotica; paralytic incapacitation for motion, as regards the eyelids; the animal is unable to open its eyes, which, however, are not necessarily agglutinated; peculiar glassy appearance of the eyes, with contracted pupils, and discolored conjunctiva and iris; yellow or brownish and turgid appearance of the vessels of the eyes; swelling and redness of the caruncle; intense tenderness of light; ulcer on the cornea; white or jelly-like spots upon the cornea; appearance like proud flesh in the ulcerations.

In respect of the Muzzle, Mouth, Tongue, Throat, Nose, &c.—Muzzle hot and dry; stained, discolored, yellowish, or brownish appearance of the muzzle; development of black-looking tumors on the muzzle and about the nose; callous excrescences, with harsh roughness of the skin; warts on the muzzle; scurfy or scabious pustules or vesicles on the muzzle; the mouth and tongue dry; tongue coated and white, or covered with vesicles; the inside of the mouth swollen; the mouth emitting a very offensive odor; throat inflamed; tonsils inflamed and suppurating; softening, decay, and looseness of the teeth: also, bleeding of the teeth; the gums much swollen; gums easily provoked to bleed, or spontaneously bleeding, or sometimes ulcerated, with discharge of blood more or less abundant, and generally very dark from the ulcers; swelling, and acute tenderness of the glands of the nether jaw, and *yellow color around the mouth;* the nose emits an offensive odor; the nostrils are ulcerated, with or without the formation and decidence of scabs; profuse watery discharge from the nose, with sneezing; or accumulation of dry, caking matter in the nostrils, which obstructs them; great predisposition to discharge of blood from the nose; or frequent and even spontaneous discharge generally of very dark blood; or habitual bleeding of the nose after exertion.

In respect of the Extremities.—Callous excrescences, warts, and corns,—and general cutaneous symptoms, as already described under the head of "skin and external surface;" also, development of ulcers on or about the joints, which do not appear to impede action or cause suffering; malignant vesicles, terminating in ulceration of the heel; sudden quailing, faltering, and sometimes collapse of the quarters; the legs and feet are swollen and cold, or cold without swelling; the joints and limbs generally become stiff during brief rest after exertion, the pace being short, constrained, and jarring; swelling of the soles between the frog and crust; or descent even of the frog, so that the nether or ground surface of the foot is deprived of the concavity so essential to elasticity, &c.; excessive protrusion and swelling of the sole, so that it projects beyond the crust.

SILICEA.

CHARACTERISTIC SYMPTOMS.

In respect of the Pulse.—Small and accelerated, or feeble and almost imperceptible pulse.

In respect of the Skin and External Surface.—Sweating after moderate exertion; exhausting sweats in the morning; frequent but evanescent heat, and predominating coldness; predisposition of the skin to convert the slightest sore into malignant ulceration; swelling (hard or suppurative) of the glands; predisposition to the development of proud flesh; fungus in the knee; malignant suppurative process affecting membranous tissues in particular; suppurative processes in general; carbunculous tumors and excrescences; enlargements of the nature of conglobate glands; fistulous sores, ulcers, or pustules, or predisposition in the affected parts to tubercular development; tubercular character assumed by every eruption; or tumors or enlargements which assume a hard and permanent character; swelling or rigidity affecting joints, or the course of bones; or swellings which impede the action of particular parts; casting of the hair, and sometimes also of the skin; the hair is cast in patches, by the eruption of patchy or clustering pustules or vesicles, which ooze and form scabs, whereby the hair is dislodged; watery tumors generally, and indurated tumors about the udder and teats; hard and knotty lumps developed in various parts of the body; tumors which undulate when touched, or when the animal is in motion, but which are not susceptible of impression; wasting away of the body.

In respect of the Excrements.—Very hard, lumpy evacuations, which are slowly expelled with much effort, and often with moaning and painful expression; or purely serous discharge, having the odor of decomposed anim matter.

In respect of the Urine.—Constant urging, with difficult and scant discharge; sandy-looking urine, or sometimes dark reddish-brown urine.

In respect of the Organs of Generation, &c.—Predisposition t abortion; discharges of blood from the womb; inflammation of the udder an teats; general hardness and knotty swellings in the udder and teats; abscesse and other lymphatic tumors in the lacteal organs, or fistulous ulceration of th parts; *dropsical swelling of the scrotum in the male;* discharges of blood fror the womb in the female, provoked by the suckling of the young; redness, itching, and soreness of the bearing.

In respect of the Appetite.—Diminished inclination to eat; or, a first, unaltered or morbidly voracious appetite, with the presence of th earlier skin symptoms, and gradual decrease of appetite to loathing of al food, with increased and continual thirst as the pulse becomes smaller an quicker; thirst with, however, desire to drink little at a time, and very frequently.

In respect of the Muzzle, Mouth, Nose, &c.—Muzzle hot and dry or discolored and covered with a dry, fissured, scabby eruption; the lip swollen, the corners of the mouth ulcerated; very frequent and violent sneezing, or sneezing which is interrupted and incomplete; the nostrils are inflamed; the animal is constantly rubbing the extremity and sides of the nose continued stoppage of one or both nostrils, with intense dryness and heat there is continual appearance as of a cold.

In respect of the Ears.—Internal swelling of the ears, with hardnes and swelling of the adjacent glands, and evidently obtuseness of hearing.

In respect of the Eyes.—Great tenderness of light; fistulous ulcerations, particularly of the lachrymal gland; perforating ulceration of th caruncle; swelling and redness of the eyelids; redness of the conjunctiva cloudiness of the transparent parts of the eyes, with or without discoloratio of the iris; fungi or ulcers, or simply jelly-like or white specks or dots upo the cornea; the eyelids spasmodically closed, or agglutinated.

In respect of the Respiratory Organs.—Suffocative, dense, stifle cough at night, and sometimes continual loud sonorous coughing; or low, internal, husky, gurgling cough; short, dry cough, with excessive tenderness o the chest, the animal wincing when the hand is simply passed over, an coughing or giving vent to a whine or moan when the finger is applied witl any force to the centre of the chest; short, accelerated breathing, with panting; or slow, oppressed respiration, with heaving of the flanks; or constant interrupted sighing, the animal being suddenly arrested in the effort to draw a long breath by pain, and effecting the respiration by several short puffs, an very slowly.

In respect of the Extremities.—Yielding and quailing of the limbs coldness of the extremities generally; coldness, but occasionally heat, of the extremities of the ears; swelling of the whole length of the legs, or from the hock and knee to the coronet; swelling and induration of the circumference o the coronet, and of the circumference of the pasterns; inflammation, with swelling, of the knees or hocks, with or without fungus; ulcerations, the ulcers assuming a dead white, dirty hue; foul odor from the feet; enlargement and protuberance of the soles of the feet between the crust and frog.

Silicea is chiefly useful in softening or inflammation of the bones and periosteum, fistulous ulcers, low, poor condition of body; also after Hepar or Sulphur, during the healing of an abscess.

SPIGELIA.

CHARACTERISTIC SYMPTOMS.

In respect of the Eyes.—Inflammation of the margins of the lids, with ulceration; inflammation of the whites of the eyes; the upper lids hang down as if paralyzed (ptosis); rheumatic ophthalmia; great sensitiveness of the eyes to the light.

In respect of the Chest.—Shortness of breath; difficulty of breathing; spasms of the lungs in rheumatic affections of the heart; *palpitation of the heart;* unusually strong beatings of the heart; rheumatism of the heart; tumultuous beating of the heart; *violent beating of the heart,* with *enlargement or dilatation,* and great distress.

General Symptoms.—Chilliness in the morning; rheumatic lameness; great debility. All the sufferings are worse in the afternoon.

SPONGIA MARINA TOSTA.

CHARACTERISTIC SYMPTOMS.

In respect of the Pulse.—Hard, sometimes suppressed and barely distinguishable; or very extraordinarily hurried and hard; or full, hard, and accelerated; or very hurried, small, and gradually attenuating pulse, which becomes less and less distinct; pulsation of the heart hard and perceptibly hurried.

In respect of the Skin and External Surface.—Intense and burning heat of the whole body; skin intensely hot and dry; yielding distension of the skin about the head or various parts of the body, such as that of inflated bladders, occasioned by the generation and incarceration of noxious gases beneath the scarf-skin, or even within the true skin, and which is characterized by a peculiar hollow sound, such as that produced by tapping an inflated bladder with the finger; swelling of the glands in various parts of the body, with or without induration; occasional flushes of heat; often there is general shivering over the whole body, or especially about the back, flanks, and quarters; and peculiar crawling irritation of the skin appears to prevail, as evinced by local quiverings like those provoked by flies; the animal rubs or scratches the part repeatedly, and the friction develops a deep redness of the skin, attended with great local heat.

In respect of the Movements and Position.—The first appearance of the sudden puffing of the skin is attended by a peculiar stupor, which, however, is quickly succeeded by violent pawing of the ground and rolling; or, sometimes, there is wild and frenzied excitement, the animal arches its tail, stretches out its neck, elevates the muzzle, lows or bellows, or howls furiously and plunges onward, evidently in furious delirium; or, again, the animal will sometimes seek water, and roll or wallow in it, as if to cool the intense and fiery heat of the skin: we may also remark a strong disposition to lie down, and to remain quite tranquil, in recumbency.

In respect of the Milk.—First decrease, and deterioration of quality,—then watery, bluish, or serous milk; and, finally, total suppression or drying off of the milk.

In respect of the Appetite.—Repugnance to all solid food, and eager pursuit of cold water; intense and burning thirst; in other instances diminished appetite, quickly glutted; and, again, occasionally, ravenous and continual hunger, unappeased by eating.

In respect of Rumination.—Suspended.

In respect of the Muzzle, Mouth, Tongue, &c.—Mouth and tongue intensely hot, parched, and dry; sometimes grinding of the teeth; or numerous white vesicles on the mouth and tongue, with burning heat; swelling of the gums, with evanescent redness, but constant heat, and generally with intense dryness; the muzzle is dry to the degree of being parched, and excessively harsh to the touch, and is of a scorching heat; the glands of the lower jaw are swollen; great enlargement of the glands of the neck, so that they hang down.

In respect of the Eyes.—The eyelids puffed, the eyes dim and filmy; or watering of the eyes, with vivid redness; or weight in the upper lids, and the eyes half closed.

In respect of the Evacuations.—Very hard and dry; dry, and as if burnt (even in cattle); sometimes, also, we may notice loose and pale evacuations, and the discharge of worms in the excrement.

In respect of the Urine.—The characteristic symptom in respect of the urine consists in the unfrequent but copious discharge of very clear, pale urine; we may also occasionally notice spontaneous discharge, and even a scanty discharge; or discharge in an attenuated stream, as if the orifice were contracted; or thick, turbid, sometimes whitish or dusky, sometimes yellowish urine; frothiness is also a common symptom.

In respect of the Respiratory Apparatus.—Hollow, deep, rough, hoarse, or barking cough; cough which is loud and sonorous; *weak, husky, wheezing sound, emanating from the throat;* racking cough, with dry heat of the throat; cough which appears to emanate from the nostrils; peculiar rattle in the throat (*i. e.*, in the air-passages) at every breath; accumulated and difficult breath, or breathing anxious and impeded; rattling in the throat (*i. e.*, the air-passages), as if some body, as a valve, were flapping within it.

Summary.—Loss of appetite; lassitude; giddiness—disposed to fall to one side, or backward; rush of blood, with heat on the forehead. Difficulty in opening the eyes. Dry or fluent discharge in the nostrils. Accumulation of fluid or mucus in the mouth; vesicles on the tongue; intense thirst. Stool hard, or first portion hard—second soft. Ascarides. Frequent passing of urine—small stream and frothy; inability to retain it. Constriction in the larynx. Difficult respiration, as if the larynx were closed by a plug. Hollow and constant cough; respiration slow, deep, as when exhausted; hurried panting; wheezing; distension of the veins, and arrest of breath. Weariness in the knees when walking, as if they would give way; tension, as if the muscles of the legs were too short.

SQUILLA MARITIMA.

CHARACTERISTIC SYMPTOMS.

In respect of the Extremities.—Violent throbbing of the artery of the pastern; flinching and retraction of the foot when the horn is lightly struck; excessive heat of the feet;* separation of the hoof from the coronet, particularly towards the heel; convexity of the sole; pumiced foot; or flatness of the sole, that is, projection of the sole to the level of the crust; brittleness of the hoof; contraction, raggedness, tenderness, brittleness, and roughness of the frog; offensive discharge from the cleft of the frog; diminution of the horn; accumulation of concreted matter, which is cast, and exposes the sensitive part of the frog; fungous granulations, arising out of ulceration of the frog; gangrenous, spreading, and corrosive ulceration; decidence of the horn; fungous excrescences on the crust, sole, and frog.

In respect of the Skin and External Surface.—Dry and burning heat; dry and intense heat of the parts affected, generally, with coldness of the limbs (in sound parts) and of the extremities of the ears; general heat of the body; muscular throbbing in various parts, and violent pulsations in the affected parts in particular; swelling, with or without high inflammatory action of the glands, but tending to induration; local heated parts, generally or frequently attended with severe itching and irritation, manifested by the movements of the animal; such parts are also very tender in general, the animal betraying pain, induced by its very attempt to allay the irritation; complete mortification attending sores, developed in various parts.

In respect of the Movements.—The animal has a great disposition to lie down, but is slow to effect its purpose, appearing cautious of drawing the feet sufficiently under it; the animal shifts restlessly from one foot to the other, suddenly snatching first one and then the other from the ground, and striking *at* the ground, but cautiously avoiding the actual concussion or contact; after continuing these restless movements for a considerable time, the animal lies down, rather by dropping than in the habitual manner.

In respect of the Eyes.—The pupils considerably dilated, or occasionally contracted, the eyes being constantly wide open, fixed, and staring.

In respect of the Pulse.—Full, hard, and accelerated,—or hurried, small, and wiry.

In respect of the Muzzle, Mouth, Throat, &c.—The muzzle stained—dark brown, blackish—cracked, or scabby, and always dry and hot, generally burning and parched. The mouth is open, dry, and hot. The breath hot, and often offensive. The teeth are discolored. The throat dry, and the tongue characterized by the appearance of vesicles, more or less malignant.

In respect of the Appetite.—Variously, repugnance to all solids (the more common case), or unnatural voracity. Appetite wanting (with indifference and dejection), or intense and continued thirst, with preference for very cold drinks, and dislike to warm mashes and the like.

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* The prevalence of inflammatory symptoms constitutes the distinct characteristic of *Squilla*; the additional symptoms recited are rather the consecutive results than the direct and specific manifestations. So long, however, as acute inflammation subsists, the action of *Squilla* is identified. The complications imply the development of additional features, which, however, do not annul the first specific feature.

In respect of the Evacuations.—Offensive evacuations, principally consisting of undigested food; thready evacuations, with the presence of thin and stringy membranes, and often of worms. Constipation, with hard and imperfect evacuations, or diarrhœa, with very dark-colored evacuations, and excessive flatulency; or brownish loose evacuations, or even black and liquid excremental matter; evacuations, with more or less admixture of blood.

In respect of the Urine.—Profuse and colliquative discharge of pale clear watery urine; very constant and unrestrained micturition; or sometimes scanty, red (bloody), dark-colored, and very hot discharge; forcing of the parts after the discharge, and, finally, ejection of blood.

In respect of the Respiratory Apparatus.—Rapid difficult breathing; anxious respiration (the animal lying extended flatly on the flank, with the head stretched backwards, and standing with the fore legs apart); moaning with every respiration, and lying, or standing with the mouth open, not breathing through the nostrils. Cough, which convulses the stomach, and shakes the whole frame; hoarseness, and rattling in the throat, terminating in cough. Frequent, interrupted, and dry cough.

Violent cough. Congestion of the lungs. Lancinations in the chest and side.

STAPHYSAGRIA.

CHARACTERISTIC SYMPTOMS.

Blackness, and premature decay of the teeth; intolerable pain in the decaying teeth; *caries of the teeth and of the bones* in patients which have been mercurialized. Flow of water from the mouth. Extreme hunger, even when the stomach was full of food. Constipation. Diarrhœa, worse after drinking cold water. Copious and frequent flow of urine; frequent emission of urine at first watery, then dark yellow; frequent and scanty discharge of dark-colored urine; reddish or dark-yellow urine flows drop by drop; painful discharge of urine. Glandular swellings. Abscesses.

Useful in incised, punctured, and cut wounds; even in stabs. Swellings, inflammation, and caries of the bones. Nodes on the joints or bones; exostoses. General debility. (Scrofulous affections in the human subject.) Inflammation of the joints threatening suppuration.

*SULPHUR.**

CHARACTERISTIC SYMPTOMS.

In respect of the Pulse.—Accelerated, hard and full, or increased rapidity, with either of the other characteristics; or occasionally the pulse hard or full, without much acceleration; or sometimes even hard (*i. e.*, wiry) and thin.

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* *Sulphur*, one of the most important medicaments known, as applied to the treatment of *human disease*, is, if possible, still more universally useful in the treat-

In respect of the Skin and External Surface.—Chills, with shivering, in the open air—the like towards night,—and during the night shivering fits, involving the whole body, or particular parts only, such as the chest and back in particular; chills, followed by intense heat, and afterwards by sweating, and which occur at all times of the day or night; colliquative sweats, which constantly recur at irregular periods, and without any periodical order. Sour-smelling sweats; sweats which are developed on particular parts only, especially on the extremities (as the fore legs, the chest, back and flanks); the glands generally may be found swollen and inflamed, or the swelling and inflammation may be followed by induration on the one hand, or by suppuration on the other; the animal is very sensitive of having the hair reversed, the skin being generally acutely sensitive and tender; continued and excessive decidence of the hair and wool, large surfaces remaining bare, and being sore, cracked, and excoriated; scurfiness and peeling off of the skin, the skin generally sore, cracked, and excoriated, even under the hair; the development of ulcers, surrounded by puffed and tumid edges, which, as well as the surrounding surface, are either of an inflammatory, vivid, or darkened hue, or purplish, and even of a dark livid color. Ulcers, surrounded by numerous pustules, partaking of the same character, color, and appearance as the ulcers; and sometimes constituting minor ulcers, which become merged; discolored spots and patches on various parts of the body; patches of a brownish or blackish color on the skin, or premature white patches; intense and constant itching and irritation of the skin, the animal perpetually scratching and rubbing itself, and thereby provoking excoriation and cracking of the skin; bleeding of the parts so chafed; the formation of scales over chafed parts; dread of the application of cold water to the skin; oozing pustular eruptions, or oozing of chafed parts, terminating in yellow, red, and sometimes black incrustations; oozing of yellow matter; swelling, red, or mottled and puffy eruption on various parts, but without the development of irregularities of surface, and without discharge; bladder-like flaccid tumors, containing matter, generally bare (the hair being shed); or hard, distended, tight, hot tumors, without much alteration of color; or highly inflammatory abscesses; lumpy, hard, and knotty concretions or swellings; lumpy swellings, and hard irregular elevations about the udder; ulcers developing proud flesh, or discharging blood-streaked, thick, yellow, lumpy, and very offensive matter, or easily provoked to bleed; extreme emaciation of the whole frame; decidence of the hair of the tail (or rat-tail), and sometimes also of the mane. The generation of lice, which rarely, if ever, takes place in a state of health; lice, especially behind the horns and ears; lice upon mares, sheep, lambs, calves, and pigs; flaccidity of the skin generally; the flesh (of pigs) retaining the impression of pressure;

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ment of diseases incidental to the *subordinate animals*. In some respect or other, it embraces features appertaining to every disease, and appears in the trebly important aspect of a *prophylactic*, *immediate*, and *consecutive* remedy: (1) During the prevalence of epidemic or endemic disease; (2) during the course of disease; (3) during the continuance of *after effects*, when the system is unable to effect a *perfect* reaction without further aid.

in drawing the bristles, the roots will be found black and bloody; a profusion of small watery pimples between the fat and the external skin (of pigs), and the development of red patches, with slight elevations, first between the fore legs, about the groin, and on the inner side of the thighs, and sometimes becoming general all over the body.

In respect of the Movements.—Uneasiness and restlessness, the animal continually changing position, and alternately stretching and huddling itself up; weariness, languid motion, and dread of exertion or movement, the animal being slow and tardy to be put in motion, but improving with action; *drooping, languid*, and sometimes faltering, tottering, and quailing gait; the head is stretched far forward, but carried low, and is rarely elevated, and never carried long in a horizontal position. The ears are generally turned back or drooping, but rarely erect; striking the animal seems to cause much pain, but does not accelerate its pace; sometimes the animal, if found continually lying down, and if disturbed, cannot be thoroughly roused, and only moves away (often with an expression of suffering and dejection) to lie down again in another place; in other cases the animal is never known to lie down, except occasionally, and even frequently, to roll (especially the horse if at grass), but always sleeping in an erect position, and being very easily roused: the animal is continually rolling itself; or it stands with the fore legs apart, or sometimes with the hind legs apart, or sometimes also with the back arched, the head much lowered, and all four legs closely huddled together; sometimes, again, the animal will not eat from the rack, or even, in some instances, from the manger, but prefers to gather its food from the ground, and to eat with the muzzle continually lowered: sometimes, again, the animal will not even drink from any vessel placed on the ground, but paws and overturns the pail, or other vessel so placed, and only drinks when it is placed or held on a level with the head, as, for instance, in the manger.

In respect of the Head.—Reeling giddiness, with staggering, and with or without faltering; staggering, reeling, and quailing, upon first assuming an erect position, or uncertain pace, occasioned by giddiness upon first being put in motion.

In respect of the Eyes.—Redness and inflammation of the conjunctiva and sclerotica; redness and swelling of the *caruncle;* discoloration of the iris; vivid redness and suffusion of the whole eye; injection of the conjunctiva; cloudiness of the transparent structure of the eye; sometimes a faint yellow appearance of the sclerotica, or turgid brownish hue of the caruncle, and of the vessels of the eye. Spots, more or less opaque and white, upon the surface of the eye; accumulation of grayish fluid about the cornea; or suffusion of semi-opaque adhesive matter over the whole surface of the eye; excessive dryness, with heat of the inner and outer surfaces of the eyelids at night, and within doors; or copious watering of the eyes in the open air, when exposed to strong light or to cold wind; extreme dimness of sight with close contraction of the pupils; the margins and the whole of the inner surface of the eyelids are extremely red and inflamed, sometimes even ulcerated, in which case the ulceration extends to the cornea; vesicles developed over the inner surface of the eyelids, and upon the cornea itself; pustular eruption around the eyes; quivering and trembling of the eyelids; accumulation of matter in the eyes, and upon the eyelids, and adhesion of the lids at night.

In respect of the Ears.—The ears are generally cold, except at the root and within the cavity, where there is increase of heat; excoriation and cracking of the skin behind and round the root of the ears; scabs on the ears; *lice behind the ears.*

In respect of the Appetite.—Increased and inordinately ravenous appetite, when eating is followed (often by vomiting) by great uneasiness, or by torpor, and by inflation and distension of the stomach of long continuance; generally, however, we observe decreased appetite, if not absolute repugnance to solid food, with continual thirst.

In respect of the Intestines.—Hardness, swelling, and tenderness of the region of the liver. Sometimes, also, equal tenderness of the belly (both ascertained by the movements of the animal on pressure of the parts).

In respect of the Organs of Generation.—Inflammation and swelling of the bearing; discharges of somewhat pale blood from the womb, or occasionally of very black blood; intense increase of sexual instinct and constant heat; swelling and inflammation of the udder and of the lacteal glands; red swelling and general inflammation of the udder, involving the teats; soreness, excoriation, with dry and burning heat, and sometimes bleeding ulceration of the teats; excessive flaccidity of the scrotum (in the male).

In respect of the Muzzle, Mouth, Gums, Tongue, Throat, Nose, &c.—Dryness and heat of the muzzle; or dry, rough, and fissured muzzle and lips; discoloration of the muzzle; ulceration of the muzzle, with scabby incrustation; eruption of clustered vesicles about the corners of the mouth; swelling and inflammation of the glands of the nether jaw; tense and swollen gums, discharging matter and blood; looseness, dislodgment, and bleeding of the teeth, with or without retraction of the gums; the teeth are covered with dark-colored and adhesive phlegm or matter; the skin of the interior of the mouth is dislodged in patches; the tongue is thickly coated white or brownish, and is hot, fissured, very harsh (or rather rough, besides the natural harshness), and intensely dry; aphthous vesicles are developed on the tongue, and throughout the mouth; the tongue is sometimes moist during fasting, but the mouth generally is hot and dry; the mouth emits a very offensive odor, particularly after eating, or the first thing in the morning, and there is sometimes a profuse secretion of saliva; the throat is dry and sore, and the glands are swollen, vivid red, and inflamed; discharge of thick, yellow, or blackish matter or phlegm from the nose; the nostrils are stopped and dry, hot, cracked, and scabby, or severely ulcerated, or copiously discharge a thin, watery, hot secretion; the scent is variously affected—sometimes peculiarly acute (but not susceptible of distinctions of scent), and sometimes materially diminished, if not totally deficient; polypus of the nose.

In respect of the Milk.—Spontaneous discharge; deterioration of quality; secretion of thin serous milk, which yields no cream; milk of a bluish, watery character; milk seriously diminished, if not totally deficient.

In respect of the Excrements.—Costiveness, with constant urging; discharge of hard, dry, dark, or pale, lumpy evacuations, detached piecemeal, and incomplete; or discharge of phlegm, with hard knotty evacuations; or with diarrhœa, and very loose and frequent evacuations; inflation and distension of the belly, and much uneasiness; very profuse discharge of liquid fæces, with shivering, distress, and evident debility; spontaneous evacuations;

evacuations varied in consistency and color; discharge of phlegm and froth with the evacuations, or sometimes of bloody matter, or blood-streaked phlegm; swelling, redness, and soreness of the anus, and protrusion of the intestine.

In respect of the Urine.—Copious and frequent discharge (with a strong jet) of clear, pale, watery urine; or retention or very scanty discharge, with or without continual and severe urging; very offensive urine; urine with the presence of greasy, oily matter floating on the surface; urine mingled with blood, phlegm, and froth; redness, swelling, and inflammation of the bearing, &c.

In respect of the Respiratory Organs.—Snoring, noisy, or rattling respiration; thick and puffing breath; short and interrupted breathing; impeded and difficult respiration, with intermissions of suppression of breath, and deep and gasping breathing; heavy, panting, or heaving respiration, with full, hard palpitation of the heart, which is sometimes observable by sight, without contact; moist cough, with gurgling of phlegm in the throat; hoarse and moaning cough; dry cough, which sometimes provokes retching, and is aggravated by lying down, or by eating, or occurs chiefly towards night, and during the night.

In respect of the Extremities.—Nodosities and swellings of the joints; the skin symptoms in general, as already described under the head of "Skin and External Surface;" vesicles emitting matter, and forming scales in the fold of the joints, or in the creases of joints; enlargement of the bones of the limbs in particular parts—the small bone of the lower portion of the leg especially; spontaneous raising and contracting of the legs; weakness and failing of the legs; swelling of the legs in general; development of warts on the extremities; red spots or pimples, attended with great tenderness, on the inner side of the thighs; stiffness and numbness of the legs; sweating of the legs and feet, with great coldness; convexity, swelling, heat, soreness, or *flatness* of the soles; swelling, with rigidity and obstruction of the joints of the legs generally; affections involving the bones or sinews; enlargement of glands; coldness of the feet, or intense local heat in the sole, and about the particular parts affected; suppurative sores about the feet in particular; decidence of the horn; fungous excrescences, and separation of the coronet and crust; affection of the nature of spavin, splint, windgall, &c.; dropsical puffing of the legs.

Summary.—Chiefly in diseases of long standing, or those forms which follow, or result from, acute attacks. Obstinate skin diseases. Suppurations. Strangles. Surfeit. Mange. Grease. Cystitis. Worms. Voracious appetite. Sluggish abscess. Ulcerations. Rapid loss of flesh. Out of condition. Coat rough and staring. [*Sulphur is especially useful when the animal is recovering from acute disease; but should not be repeated too frequently.*] Drowsiness; sleep unsound; disquiet—rising up and lying down; jerking in the limbs when lying down; starting of the whole body. Profuse sweat, sometimes day and night. Coldness about the ears. Staggering upon first coming into the open air. Timid; soon frightened. Ulcers on the cornea. Swelling of the lips. Ulcers in the mouth and on the tongue. Tumor in the throat. Weakness in the legs; they seem unable to bear the weight of the body. Cracks and ulcers on the teats. Constant cough; sometimes hoarse and rough.

SULPHURIS ACIDUM.

CHARACTERISTIC SYMPTOMS.

Loss of appetite and great debility; diarrhœa, with great debility; hard stool of small black lumps, mixed with blood; hemorrhages of black blood from the various outlets of the body; leucorrhœa, with bloody mucus; milky or transparent leucorrhœa; profuse perspiration, with great debility; cough, with expectoration of blood.

Sulphuric Acid becomes an invaluable remedy in *aphthæ*, or *stomacace*, with debility, or other of the above symptoms concomitant. Indispensable in *purpura hemorrhagica*, oftener seen in the human subject; but sometimes appearing more or less plainly in domestic animals, especially in certain typhoid conditions, and characterized by red spots, which become larger and darker (black and blue), and accompanied with discharges of black blood from the nose, gums, mouth, fauces, anus, and urethra, with rapid prostration of strength. This remarkable group of symptoms, indicating decomposition of the blood and loss of its vitality, is often seen in the advanced stages of the various forms of cattle plague, rinderpest, pleuro-pneumonia, and other malignant disorders.

Consequences of mechanical injuries, bruises, and contusions, showing the above-mentioned black and blue spots, are often removed by this remedy. Contusions, with excoriation.

Cough, with expectoration of blood.

Ulcerations, dark and discolored, looking like mortification.

Small quick pulse. Weakness in the limbs; unable to stand.

Sulphuric Acid should be borne in mind in treating forms of disorder with great and rapid prostration; and may be compared with Arsenicum, from which it may often be distinguished by an entire absence of thirst: Arsenicum has burning thirst, for little or for much; Sulphuric Acid has little, if any thirst at all.

SYMPHYTUM (Comfrey).

CHARACTERISTIC SYMPTOMS.

Fractures of the bones; contusions and injuries of the bones and periosteum; indolent and scorbutic ulcers. Given internally, and at the same time applied externally.

TARTARUS EMETICUS.

CHARACTERISTIC SYMPTOMS.

In respect of the Pulse.—Full or tremulous, or even feeble, and barely perceptible pulse; or full, quick, and soft pulse; or simply accelerated and full; or quick and irregular (unequal) pulse.

In respect of the Muzzle, Mouth, Throat, Nose, &c.—Muzzle or snout dry, not cracked, and sometimes convulsively distorted; the tonsils and throat swollen, red, and inflamed, and then purple or livid, ulcerated and gangrenous; gangrenous ulcer on the tonsils; tongue protruding and covered with saliva (of pigs); roughness of the throat, with gurgling and difficult deglutition (strangles of pigs); parched and fissured lips, often with scaling off of the skin; the tongue often moist, sometimes clean, and sometimes also coated brown; profusion of saliva in the mouth; ulcerated nostrils, or profuse watery discharge from the nostrils, with continual sneezing, and deterioration or deficiency of scent.

In respect of the Skin and External Surface.—Mangy eruptions on the skin; sudden manifestations of redness of the skin, with oozing, decidence of hair and bristle, intolerable irritation, and the development of sores, which become incrusted with scabs. Redness, glossy swelling, and inflammation; swelling, with vivid redness of the skin; discoloration of the skin extending to the hair (especially visible in white or light-colored coats, or in animals which have little hair); falling off of the hair in large patches, leaving the skin uncovered, and betraying the rough, scabby, sometimes rust-colored surface; eruption of pustules, surrounded by a vivid red surface of the skin, forming a distinct ring around the pustules; excessive itching of the skin over a considerable extent around the margins of passive or sluggish ulcers; colliquative and frequent sweating, especially about the affected parts (if local); often cold sweats and profuse night sweats; most frequently cold and shivering prevail, but sometimes there are intervals in which the whole surface of the body is affected with intense and burning heat; sometimes, also, the heat involves every part except the ears and extremities.

In respect of the Movements.—Uneasy, restless, and agitated, with strong inclination for recumbency and quiet, but constant disturbance induced by the irritation of the parts affected.

In respect of the Head, &c.—Swelling and general enlargement of the neck and glands of the neck, with continual tremulous agitation or oscillation of the head.

In respect of the Appetite.—The animal seems to have strong inclination to eat, but eats little, and, after beginning eagerly, quickly leaves its food; craving and inordinate hunger, but with inclination for particular kinds of food only; the animal eats little, without, however, total loss of appetite, but is, nevertheless, affected with intense and continual thirst, and drinks with avidity; or again, in some instances, there is total absence of appetite.

In respect of the Digestive Functions Generally.—Convulsive retching, accompanied with diarrhœa and discharge of liquid or frothy evacuations, and with positive sinking as if in a swoon; continual and copious vomiting, with watering of the mouth; foul sour-smelling, and bilious vomits, or vomiting of food; vomiting of phlegm only accompanying similar evacuations (with excessive looseness).

In respect of the Excrements.—Alternate costiveness and diarrhœa; very loose, papescent, slimy, or coaty evacuations; yellow, or bloody and loose, or even spontaneous, evacuations.

In respect of the Urine.—Spontaneous emission; bright, vivid red urine, depositing threads as it were of coagulated blood; turbid urine, of a dark brown, or sometimes yellowish color; very copious discharge of urine, apparently attended with considerable pain, and emitted in a small stream; slow discharge of very abundant urine.

In respect of the Respiratory Apparatus.—Cough, attended with vomiting of food immediately after eating; hollow-sounding, rattling, gurgling, and purring cough; a hoarse, purring, rattling respiration, occasioned by the presence of considerable loose phlegm on the chest; suffocative cough, with roaring or purring in the air-passages; short, difficult, and impeded, or slow, deep, and oppressed respiration, with violent pulsations of the heart, observable by sight without contact.

In respect of the Extremities.—Extreme itching and irritation of the extremities; intense coldness and numbness of the legs and feet, except there be local inflammation, when the affected part will often be intensely hot, and the remaining portion of the limbs characterized by icy coldness; the joints become stiffened and numbed by inaction, and quail or yield upon first being exercised.

Summary.—Inflammation of the lungs; difficult breathing. Respiration rapid. Copious accumulation of mucus in the chest. Loud rattling of mucus. Pulse rapid, weak. Constant flow of saliva from the mouth.

TEREBINTH.

CHARACTERISTIC SYMPTOMS.

Recommended for dropsy, catarrh of the bladder (chronic), hæmaturia or hemorrhage from the kidneys, and for tapeworm (tænia).

In respect of the Nose.—Watery fluid from the nose, from one nostril, or from both; violent bleeding at the nose.

In respect of the Stool.—Thin, yellow stools, with discharge of tænia and ascarides; from giving large doses.

In respect of the Urinary Organs.—Inflammation of the bladder; diminished urine; complete suppression of urine; scanty, red, and even bloody urine; a slimy sediment in the urine; discharge of blood from urinary organs; blood thoroughly mixed with the urine, forming a dirty, reddish-brown, or blackish fluid; urine depositing a muddy, white-yellow, or slimy sediment.

In respect of the Chest.—Dry cough; difficulty of breathing.

General Symptoms.—Stiffness of the limbs; dropsy; general languor; fever, with violent thirst.

THUJA.

CHARACTERISTIC SYMPTOMS.

In respect of the Organs of Generation.—Swelling of the sheath (in the male), with excessive susceptibility of sexual instinct in the male and female; continued and constant heat, often unappeased by copulation, and continuing after the development of pregnancy; callous excrescences, as warts, internally and externally, about the parts; chancrous ulcers; excessive and constant perspiration of the parts; flaccidity of the scrotum, with glandular swellings, and clammy sweat; sweating of the thighs and adjacent parts; swelling and soreness of the bearing.

In respect of the Skin and External Surface.—Redness and swellings, with considerable development of inflammatory heat; eruption of red and irregular patches, with more or less elevation; great tenderness of the parts affected, as if from subcutaneous ulceration; the animal cannot bear the slightest touch, but nevertheless appears to be relieved after pressure; purple swelling of the superficial arteries; twitching of the limbs or muscles in particular parts; partial jerkings, trembling, and agitation of particular parts; variegated patches upon the skin; continual or very predominant shivering, with partial and intermittent flushes of heat; symptoms generally which affect the left side most distinctly.

In respect of the Eyes.—Vivid redness of the sclerotica; hard, tense, red, and indurating swelling of the eyelids; knotty protuberances along the margins of the eyelids; watering of one eye (on the side most affected); the development of humid, suppurating, pustular eruptions around the eyes, with decidence of the hâir of those parts.

In respect of the Muzzle, Mouth, Throat, Nose, &c.—Incrustations of red, rusty-looking, or brown, or blackish scabs about the muzzle; muscular twitching and jerking of the lips and muzzle; excoriation; swelling, with redness, purple, or livid, or deadened blue-whitish color of the gums; accelerated action of the salivary glands; inflammation and swelling of the salivary glands; profuse secretion of saliva; aphthous vesicles, more or less malignant, and sometimes terminating in gangrenous ulceration in various internal parts of the mouth; *bloody saliva;* chancrous ulceration of the throat, and of the tonsils in particular; continual repetition of the operation of deglutition, or constant gulping; swelling redness, or purple hue of the tonsils; the tongue swollen, and excessively tender; frog tongue; swelling, cracking, vivid redness, or sometimes purple or livid hue, with the suffusion of a shining, slimy fluid, along the sides of the tongue, and under the tongue.

In respect of the Appetite.—Diminished or *deteriorated* appetite, or rather the appetite is spoilt, with or *without decrease* of inclination for food, but almost invariably with appetite easily glutted; periodical thirst; thirst which occurs during the night, or which is intense in the morning, so that the animal will not feed until after drinking.

In respect of the Excrements.—Continual constipation with inaction of the stomach, and long suspension of discharge; or with large, hard, lumpy, dry (or bloody) evacuations.

In respect of the Urine.—Frequent and copious discharge, the urine being pale, clear, watery, and the discharge being followed by a continuing, spontaneous dripping of urine; bloody or flocculent urine, generally more scanty than if clear; thick, woolly sediment, settling into cloud-like, undulating agglomerations.

In respect of the Respiratory Apparatus.—Heavy, impeded, oppressed breathing, with continual heaving of deep and sighing breath.

In respect of the Extremities.—Swelling of the veins of the limbs; callous excrescences; puffing of the legs; coldness and torpidity of the extremities; crackling sound of the joints when moving, especially when stretching, which frequently occurs; trembling of the legs and feet; parting of the coronet and hoof; suppuration and internal ulceration of the soles, and in the fissures between the frog and bar of the feet; ulcerations of the pasterns, about the knees, and in the fold of the joints generally.

VERATRUM ALBUM.

CHARACTERISTIC SYMPTOMS.

In respect of the Pulse.—The pulse is chiefly characterized by attenuation, becoming almost imperceptible; smallness, slowness, or softness (yielding); we may also observe an accelerated, or hurried, small and intermittent pulse.

In respect of the Skin, and External Surface.—Excessive coldness of the whole surface of the body, sometimes followed with intense heat; predominance of icy coldness, with cold and clammy sweat; flushes of heat about the head, with lethargic, drowsy sleep, or with frantic wildness, furious movements, and precipitate falling; intense coldness of the body generally, with intense heat at the root of the horns or between the ears; dry, harsh, chippy, scabious eruption; the hair or wool becomes lank; the elasticity of the wool becomes deteriorated; the hair and wool are shed, and the skin itself scales off, with very dry, and sometimes bluish scurfs; the skin sometimes assumes a peculiarly mealy appearance; mealy eruption, chiefly about the muzzle, eyes, and ears (especially in suckling calves); milk-crust; eruption of small, white pimples, which ooze, and dry into a scabby, whitish, or slightly bluish surface, the hair being cast, and the incrustation itself being cast, to be succeeded by another; the heat and shivering (coldness) are alike attended with thirst, generally very intense and insatiable, and indicative of violent internal fever; extreme tenderness of the roots of the hair, when reversed; flabby, flaccid skin, and excessive emaciation.

In respect of the Head.—Reeling, staggering giddiness, with falling headlong; sometimes cold, clammy sweating of the head.

In respect of the Stomach, and Digestive Functions Generally.—Immediately after the intense and general coldness and shivering, vomiting, which is generally accompanied with severe purging, and great prostration of strength, evinced by the tottering and sinking down of the animal, and by its inclination to lie down, or by a drooping and semi-inanimate appearance; frothy, bilious, black, bloody, or slimy vomiting, very frequent and copious, or continual, decreasing in quantity, with very little discharge, and with increased predominance of froth and phlegm; inflammatory *heat* of the stomach, with vomiting of blood, and excessive tenderness of the whole surface of the stomach; vomiting, provoked by drinking, however small the draught; vomiting, excited even by change of position; excessive flatulency, and noisy emission of wind; hard distension, and acute tenderness of the belly; the inflammatory, intestinal symptoms, accompanied with rapid and excessive weakness, and with obstinate constipation and absence of any evacuations, or with large, hard, lumpy, dry, and sometimes bloody evacuations.

HYDRASTIS.

CHARACTERISTIC SYMPTOMS.

Loss of appetite; faintness; constipation; cough, with expectoration of thick, yellow, very tenacious mucus, stringy and profuse.

This remedy has been much used in human practice, and to a less extent by veterinarians, for affections of the mucous membranes, such as discharges from the nose, and from the vagina—catarrh and leucorrhœa.

It has been given internally, and applied as in the form of a lotion made by mixing one ounce of the tincture with fifteen ounces of water.

Its beneficial action has also been displayed in a similar manner when applied to indolent ulcerations, especially those of the mucous membranes; "Erosions and superficial ulceration of the vagina, with tenacious discharge." In simple ulcers Hydrastis, thus externally and internally employed, is found very efficacious.

In ulcerations of the mucous membrane of the mouth, stomacace, used as a wash it is invaluable; also in those of the throat. For this latter the muriate of hydrastia is preferred.*

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* Hale's "New Remedies," 2d edition, p. 572.

TABLE OF ANALOGOUS REMEDIES,

WHEREBY THE ADMINISTRATOR MAY BE ASSISTED (WHEN THE SYMPTOMS RESIST THE EMPLOYMENT OF ANY PARTICULAR REMEDY, WHICH MAY CONTINUE, APPARENTLY, TO CORRESPOND WITH THE SPECIFIC ACTION OF SUCH REMEDY, AS PREVIOUSLY EXHIBITED WITHOUT EFFECT) IN THE SELECTION OF ANOTHER REMEDY MORE DIRECTLY APPROPRIATE TO THE CASE, AND ACCORDING TO THE INDICATIONS AFFORDED IN THE MATERIA MEDICA.

Aconitum—may, with due reference to the specific action, be superseded by Arnica, Belladonna, Cantharides, Hyoscyamus, Nux v., Spongia, or Sulphur.

Arnica—similarly superseded by Aconitum, Chamomilla, China, or Mercurius.

Arsenicum album—similarly superseded by Calcarea, Carbo veg., China, Digitalis, Graphites, Lachesis, Phosphorus, Rhus, and Veratrum.

Belladonna—similarly superseded by Aconitum, Bryonia, Hyoscyamus, Lachesis, Opium, and Sulphur.

Bryonia—similarly superseded by Aconitum, Belladonna, Nux v., Opium, and Pulsatilla.

Calcarea carbonica—similarly superseded by Arsenicum, Baryta, Carbonica, Calcarea, China, Graphites, Kali carb., Nitri acidum, Phosphorus, Rhus, and Silicea.

Carbo vegetabilis—similarly superseded by Arsenicum, Baryta c., Calcarea, China, Graphites, Kali carb., Phosphorus, Rhus, and Sepia.

China—similarly superseded by Arsenicum, Baryta c., Calcarea, Carbo veg., Graphites, Hepar s., Ipecacuanha, Kali sulph., Mercurius, Phosphorus, Phosphori acidum, Rhus, and Veratrum.

Cocculus—similarly superseded by Belladonna, Cuprum a., Hyoscyamus, and Veratrum.

Conium—similarly superseded by Hepar s., Silicea, and Thuja.

Cuprum aceticum—similarly superseded by Belladonna, Cocculus, Hyoscyamus, and Veratrum.

Drosera—similarly superseded by Ipecacuanha and Spongia.

Hepar sulphuris—similarly superseded by Mercurius, Muriatis acidum, Nitri acidum, and Ruta graveolens.

Hyoscyamus—similarly superseded by Aconitum, Belladonna, Camphor, Cocculus, Ignatia, Lachesis, Opium, Squilla, and Veratrum.

Ignatia amara—similarly superseded by Chamomilla, Cina, Cocculus, Hyoscyamus, Ipecacuanha, Sepia, Sulphur, and Veratrum.

Ipecacuanha—similarly superseded by Arnica, Carbo veg., China, Cocculus, Ignatia, Nux vom., and Petroleum.

Lachesis—similarly superseded by Belladonna, Hyoscyamus, Lycopodium, Mercurius, Nitri acidum, Sulphur, and Veratrum.

Ledum palustre—similarly superseded by Digitalis.

Lycopodium—similarly superseded by Bryonia, Calcarea, Cantharides, Graphites, Nitri acidum, Rhus, and Sulphur.

Mercurius vivus—similarly superseded by Aconitum, Antimonium c., China, Dulcamara, Hepar s., Nitri acidum, Pulsatilla, Sepia, and Silicea.

Nitrum acidum—similarly superseded by Hepar sulph., Mercurius, Muriatis acid., Rhus, and Sulphur.

Nux vomica—similarly superseded by Aconitum, Bryonia, Carbo veg., China, Cocculus, Ignatia, Ipecacuanha, Mercurius, Pulsatilla, and Sulphur.

Opium—similarly superseded by Camphor.

Phosphorus—similarly superseded by Arsenicum, Baryta c., Calcarea, Carbo veg., Kali carb., Kali sulph., Sepia, Sulphur, and Veratrum.

Pulsatilla—similarly superseded by Arnica, Bryonia, China, Cocculus, Ignatia, Nux vomica, Petroleum, Rhus, and Sulphur.

Rhus toxicodendron—similarly superseded by Arsenicum, Bryonia, Calcarea, Carbo veg., China, Cocculus, Mercurius, Ruta, Squilla, and Sulphur.

Sabina—similarly superseded by Arnica, Belladonna, Ipecacuanha, Platina, and Sepia.

Secale cornutum—similarly superseded by Arnica, Belladonna, Platina, Sabina, and Sepia.

Silicea—similarly superseded by Ruta graveolens.

Spongia—similarly superseded by Drosera, Hepar sulphuris, Ipecacuanha, and Tartarus emeticus.

Squilla—similarly superseded by Dulcamara, Nitri acidum, Ruta graveolens, Silicea, and Tartarus emeticus.

Sulphur—similarly superseded by Aconitum, Arsenicum, Bryonia, Calcarea, China, Digitalis, Nitri acidum, Nux vom., Phosphorus, Phosphori acidum, Rhus, Sepia, and Silicea.

Tartarus emeticus—similarly superseded by Cocculus, Drosera, Ipecacuanha, Spongia, Sulphur, and Veratrum.

Thuja—similarly superseded by Agaricus musc., Ammonium carb., Antimonium c., Digitalis, Graphites, Kali carb., Natrum m., Phosphori acidum, and Pulsatilla.

Veratrum—similarly superseded by China, Cocculus, Cuprum a., Hyoscyamus, Ipecacuanha, Opium, Rhus, Silicea, and Tartarus emeticus.

A BRIEF NOTICE

OF THE

MEDICINES WHICH MAY BE USED EXTERNALLY.

TINCTURE OF ACONITE.—This remedy may be applied externally in all cases of acute local inflammation. When there is at the same time inward fever, its external use will greatly aid its internal exhibition.

For external application, twenty drops may be thoroughly mixed with one pint of soft warm water, and the inflamed parts bathed with this five minutes at a time, once in three or four hours.

In sudden congestions, violent forms of acute disease, and inflammatory fevers, both local and general, this tincture may be used internally. Five drops should be dissolved in one pint of water, and a tablespoonful given once in one, two, or three hours, according to the violence of the attack; taking care to diminish the frequency of the dose as the inflammation subsides.

AMMONIUM CAUSTICUM.—This powerful remedy is sometimes used, in cases of congestion, and others also, in larger doses than common. And it being the remedy most to be relied on in some dangerous emergencies, it is put up in the box with larger vials.

TINCTURE OF ARNICA.—This remedy is specific against the local ill effects of a bruise, contusion, blow, or external lesion of any kind, by which the skin has not been broken. When the hair has been grazed off, and the skin has been injured without producing a discharge of blood, also, *Arnica* is invaluable. It should also be employed in all cases in which horses are chafed by any part of their harness or by the bow of the saddle, if recourse be had to it before blains or sores are established about the parts. It is not uncommon for cattle, when turned out to graze, to blemish the coat by rolling or rubbing themselves, in which cases also *Arnica* should be employed as soon as the blemish is discovered. It has furthermore been found very advantageous to wash the legs from the hock and knee-joints downwards with *arnicated lotion* after an animal has been exposed to overexertion. It has also been employed with pre-eminent success for the casualty so common (in summer) with cattle at grass, viz., the stings of insects.

TINCTURE OF CALENDULA is preferable to *Arnica* in all cases in which there has been much discharge of blood, or whenever the skin or flesh has been much lacerated, or, again, for application to all wounds which must necessarily *suppurate* before healing. When the wound is irritable and inflamed, and a poultice is required, add to it two or three wineglassfuls of the lotion.

TINCTURE OF CAMPHOR.—The specific remedy for poisoning by fly-blisters (Cantharides), and used for embrocation in rheumatism, and as an external and internal stimulant. See Materia Medica.

CARBOLIC ACID.—The external use and mode of preparing the lotion of this remedy are set down in the Materia Medica and preceding portions of this work.

HAMAMELIS.—Lotion made by mixing one ounce of the tincture with fifteen ounces of soft water. It is applied to bleeding piles. See Materia Medica.

HYDRASTIS.—Lotion made by mixing one ounce of the tincture with fifteen ounces of water. This is a convenient proportion, and readily made with the aid of a pint bottle. First put in one ounce of the tincture, then gradually add water, shaking by turns, till the bottle is full, and you have the lotion exactly made in the prescribed proportion of one part in sixteen.

Hydrastis lotion is used in nasal discharges, and to promote the healing of indolent ulcerations.

HYPERICUM.—Lotion prepared as above. Used for incised and punctured wounds, and especially for those in which the nervous substance is injured.

RHUS TOXICODENDRON.—This remedy is specific as an external application in all cases in which a sprain has been the manner of a local injury. It embraces all external lesions *affecting tendons, sinews, joints*, and the like. Lotion prepared as above.

SYMPHYTUM.—Used in lotion, prepared as above, as a dressing for injuries involving fractures of the bones, and to promote their reunion.

TINCTURE OF URTICA (URENS) DIOICA has been found specific against the stings of insects. It should be selected preferably to *Arnica*, when the stings have produced considerable swelling and there is burning heat and excessive tenderness of the surface to the touch, so much so that the animal shrinks from examination, and that when touched the skin quivers.

The *Urtica urens* will be found useful in all burns and scalds, when the integuments and subjacent tissues are not destroyed, and when the injury is confined to the skin.

When used for *stings*, the pure tincture of Urtica may be touched to the affected part once in half an hour, or once an hour, till the swelling begins to go down.

When applied to *burns*, this remedy will more quickly relieve the inflammation if mixed with warm water, and applied quite warm, once an hour. For burns the lotion should consist of six parts of pure soft water to one of the tincture. At first, in severe cases, the lotion should be used afresh every quarter of an hour by means of a linen rag bound about the parts, and resaturated at such intervals; but, when the severest effects of the injury have been overcome, it will be sufficient to remoisten the rag at intervals of three hours during the first day, and to bathe the parts with the lotion twice a day afterwards.

GLOSSARY*

OF TECHNICAL TERMS EMPLOYED IN THIS WORK.

[N.B.—With few exceptions, names of diseases are not here set down, since they are sufficiently explained where they occur.]

Abortion. Miscarriage.

Abscess. A collection of matter.

Anthrax. A carbuncle.

Arthritic. Pertaining to joints.

Articulation. A joint.

Bishoping. Fraudulently marking a horse's teeth.

Bronchia. Air-passages, or "pipes" in the lungs.

Bronchitis. Inflammation of the bronchia.

Byre. A cow-house.

Calculus. A stone in some internal organ.

Calculi. Stones.

Catarrh. A cold in the head or chest.

Chronic. Long standing.

Caries. Ulceration of the bone.

Concussion. Violent shaking. A shock.

Congenital. Existing at birth.

Contagious. "Catching."

Contagion. Transmission of disease by contact with morbid matter.

Constipation. Costiveness. Inactivity of the bowels.

Couching. An operation for cataract.

Coup de soleil. Sunstroke.

Convalescent. Recovered from sick- ss.

ons. Spasms.

Cornea. The clear portion of the eyeball in front.

Coryza. Flow of water from the nose. Cold in the head.

Decimal (dilution or trituration). Made in proportion of one to ten.

Desquamation. Peeling or scaling off of the skin.

Diabetes. Profuse flow of urine.

Diabetes insipidus. Urine profuse and tasteless.

Diabetes mellitus. Urine profuse and containing sugar.

Diuresis. Very great secretion and discharge of urine.

Dyspnœa. Difficult breathing.

Ecchymoses. Dark spots in or under the skin.

Emaciation. Loss of flesh.

Emphysema. A condition of the lungs in which air escapes from ruptured air-cells.

Engorgement. Morbid accumulation of blood in any organ.

Epidemic (disease). Belonging to the whole population; as if from the poisoned air affecting all alike.

Epizoötic. A disease prevailing among animals; (corresponding to *epidemic* in man).

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* Enlarged from Moore.

Equine. Relating to horses.

Extravasation. Blood escaping from the vessels into the neighboring tissue.

Fermentation. Decomposition. See Zymotic.

Fetid (**or fœtid**). Having a putrid, or offensive smell.

Fistula. A long, narrow, ulcerated channel.

Flatulence. Wind in the bowels.

Fluctuation. Movement felt of fluid in a cavity.

Frenzy. A sudden attack of madness.

Ganglia. Knots of (involuntary) nervous substance.

Ganglionic. Relating to the involuntary nervous system.

Gangrene. The beginning or first stage, of mortification.

Glands. Organs which secrete some fluid or substance; (or small bodies like the cervical glands in man, which do not apparently secrete anything.)

Granulations. Minute growths, like grain, which spring up in wounds when healing.

Gluten. A product of wheat or other flour; applied also to that element of hides from which glue is obtained.

Hæmaturia. Bloody urine.

Hemiplegia. Paralysis of one side only.

Hemorrhage. Flow of blood, bleeding.

Homœopathy. A method of healing the sick by giving small doses of substances, which in large doses cause similar diseases in healthy persons.

Hybridization. Breeding from different species, as the ass and the mare, which results in what are called hybrids, the latter being entirely incapable of reproduction.

Hypochondrium. The region on either side immediately beneath the lower ribs.

Incubation. Breeding. Period intervening between the entrance of a poison into the body, and the development of its effects.

Inflammation. A local (physiological) excitement; the part takes on a more active bloo
swollen, an

Inoculation.
depositing
the skin.

Interdigital
clefts of the
mals.

Intestinal ca
stomach to

Larynx. T
pipe.

Lesion. An
condition o

Lumbar reg

Luxation.

Mastication.

Meteorizati
See Tympa

Muco-purul
and pus.

Mucus. Flu
membrane.

Necrosis (ne
tion of bon
bone subseq

Olfactory.
smell.

Ophthalmia.
of the eye.

Osseous. B

Ossified. Cl

Paralysis.
(or of sensa

Paraplegia.
See Hemipl

Parasite. A
or animal, w
the body of

Paroxysmal.
fits.

Pathological.

Parturition.

Pharynx. T

Photophobia
fear) of the

Potency. R
homœopathi

Prepuce. Fo

Puerperal fe

after calving. "Dropping after calving."

Purulent. Relating to pus or matter.

Pustular. Relating to or resembling pustules.

Rabies. Madness, like hydrophobia in man.

Rectum. Portion of the bowel next the anus.

Respiration. Breathing.

Respiratory murmur. Sound of the air passing in and out of the lungs.

Rumination. Chewing the cud.

Salivation. Profuse flow of spittle or saliva.

Sanies (sanious). A thin, watery, offensive discharge.

Schneiderian membrane. The mucous lining membrane of the nose.

Slinking. Abortion. Miscarriage.

Serrated. Shaped like saw-teeth.

Spasms. Convulsions.

Spaying. Removing the female genitals (ovaries).

Symptoms. Name applied to morbid appearances which result from some disease, and are taken to represent it; any apparent deviation from perfect health may be the symptom which in whole or in part declares the disease.

Thorax. Cavity of the chest.

Traumatic. Relating to or resulting from a wound.

Trituration. Grinding.

Trocar. A pointed instrument having a tube slipped over it; the whole being thrust into a tumor containing fluid, the instrument (stylet) is withdrawn, and the tube left for a spout, through which the fluid passes.

Tympanitis. Flatulent expansion of the abdomen.

Ulcer. A sore on the surface.

Ulceration. Formation of an ulcer.

Ureter. The canal or tube from the kidney to the bladder.

Urethra. The tube from the bladder outwards.

Uterus. The womb.

Vagina. The passage leading to the womb.

Vertebra. One of the back bones.

Vertigo. Giddiness. Dizziness.

Vesical. A small elevation of the skin containing clear fluid.

Vesicular. Relating to vesicles.

Visceral. Relating to the viscera or bowels.

Zymotic disease. An infectious disease, like glanders, in which, according to the former ideas, there was a putrefactive ferment of the blood; but in which the blood is now believed to be infected by the poisonous or even living germs of malignant disorder.

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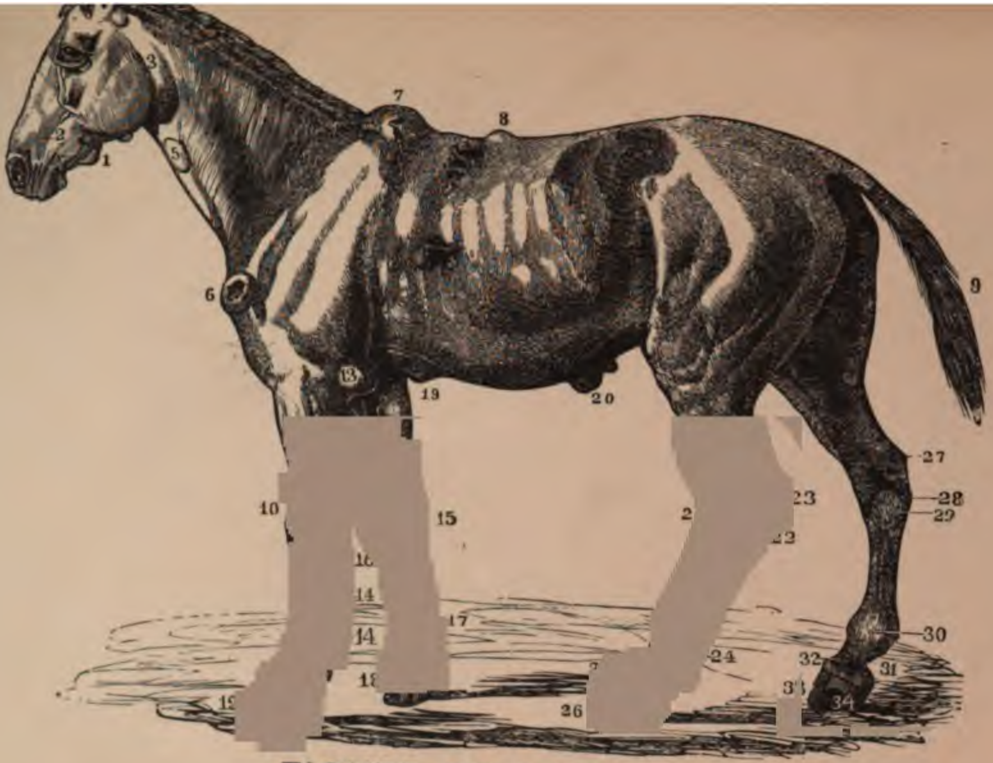

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